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September 28, 2005

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**VIA HAND DELIVERY**

Director Pat Miller  
c/o Sharla Dillon, Docket and Records Manager  
Tennessee Regulatory Authority  
460 James Robertson Parkway  
Nashville, TN 37243-0505

Re. Petition of Cellco Partnership d/b/a Verizon Wireless  
for Arbitration Under the Telecommunications Act of 1996,  
TRA Consolidated Docket No. 03-00585

Dear Director Miller:

Please find enclosed an original and four copies of the proposed TELRIC Cost Study Methodology (with attachments) filed on behalf of each of the members of the Rural Independent Telephone Coalition for filing in the above-referenced matter. I have also enclosed a CD containing electronic copies of the models submitted.

Sincerely,

*Bill Ramsey*

William T. Ramsey

/jm  
enclosures

cc Paul Walters  
Mark Ashby  
Edward Phillips  
Charles McKee  
Elaine Critides  
Dan Menser  
Marin Fettman

**BEFORE THE  
TENNESSEE REGULATORY AUTHORITY  
NASHVILLE, TENNESSEE**

**IN RE:**

Petition of Sprint Spectrum L.P. d/b/a Sprint PCS for Arbitration under the Telecommunications Act	)	Consolidated Docket No. 03-00585
Petition of T-Mobile USA, Inc. for Arbitration under the Telecommunications Act	)	
Petition of BellSouth Mobility LLC; BellSouth Personal Communications, LLC; Chattanooga MSA Limited Partnership; Collectively d/b/a Cingular Wireless, for Arbitration under the Telecommunications Act	)	
Petition of Cellco Partnership d/b/a Verizon Wireless for Arbitration under the Telecommunications Act	)	
Petition of AT&T Wireless PCS, LLC d/b/a AT&T Wireless for Arbitration under the Telecommunications Act	)	

**PROPOSED COST STUDY METHODOLOGY AND MODEL  
DESCRIPTIONS FILED ON BEHALF OF THE RURAL COALITION  
on behalf of**

Ardmore Telephone Company, Inc.  
Ben Lomand Rural Telephone Cooperative, Inc.  
Bledsoe Telephone Cooperative  
CenturyTel of Adamsville, Inc.  
CenturyTel of Claiborne, Inc.  
CenturyTel of Ooltewah-Collegedale, Inc.  
Concord Telephone Exchange, Inc.  
Crockett Telephone Company, Inc.  
Dekalb Telephone Cooperative, Inc.  
Highland Telephone Cooperative, Inc.  
Humphreys County Telephone Company  
Loretto Telephone Company, Inc.  
Millington Telephone Company  
North Central Telephone Cooperative, Inc.  
Peoples Telephone Company  
Tellico Telephone Company, Inc.  
Tennessee Telephone Company  
Twin Lakes Telephone Cooperative Corporation  
United Telephone Company  
West Tennessee Telephone Company, Inc.  
Yorkville Telephone Cooperative

September 28, 2005

## **I. Introduction and Procedural History**

The Rural Coalition of Small Local Exchange Carriers and Cooperatives (hereinafter referred to as the “Coalition” or the “Independents”) respectfully submits this filing in accordance with the Arbitration Panel’s oral directive on September 7, 2005. Specifically, the Panel requested that the Coalition Members submit their mathematical models for performing TELRIC cost studies.<sup>1</sup>

In accordance with the Procedural Schedule established in this proceeding, the Coalition Members each submitted a description of their proposed TELRIC cost study methodology on August 11, 2005. While the Coalition Members submitted this filing in the spirit of cooperation with the processes established by the Authority, the Independents restated and adhered to the position that the Coalition has set forth throughout this proceeding: as a matter of law and policy, the imposition of TELRIC cost methodology on the Independents is inappropriate and contrary to the public interest.

The Rural Coalition Members and its counsel understood that they were required to submit descriptions of their proposed methodologies, and, more specifically, where the proposed methodology would vary from the TELRIC method and the reasons therefore. In their August 11, 2005 filing, each of the Coalition Members indicated its intention to submit TELRIC-compliant costs studies. Each company described the methodology it would follow in preparing those costs studies. The Coalition Members or their expert consultants stated specifically that the methodology to be used would be TELRIC-compliant.

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<sup>1</sup> As agreed by the parties, on the record in this proceeding on July 21, 2005, and again on September 27, 2005, the materials filed as an attachment to this document are subject to the terms of the Protective Order entered in this case on April 12, 2004. The Coalition respectfully notes that the TRA has not yet issued an order with respect to its deliberations on the arbitrated matters before it in this proceeding, and that the Coalition members have reserved all rights with respect to rights to seek review and judicial appeal of the order when it is issued.

The CMRS Providers argued that the information provided by many but not all of the Coalition Members was insufficient to determine the appropriateness of the modeling methods. The Panel agreed and orally ordered on September 7, 2005, that each of the Coalition Members submit the actual mathematical models to be used and provide additional descriptions of each model. The Coalition respectfully submits that this requirement is unnecessarily burdensome and duplicative of the Panel's prior directive that the mathematical models themselves (and not just the descriptions thereof) would be submitted in the filing that is due December 7, 2005. In that filing, the Panel has required each Coalition Member to file its own separate cost study based on each company's costs.

In accordance with the oral ruling of the Panel on September 7, 2005, the actual mathematical models to be used by the consultants and experts for each of the Coalition Members are provided with this filing.<sup>2</sup> The models do not contain data as discussed with the Panel on September 7. In order to assist the Panel, the Coalition Members and their respective consultants have provided additional descriptions of the actual mathematical models used by each of the consultants for the Coalition Members as Appendix A to this filing, and, where necessary, an explanation of how the models used comply with TELRIC standards. The mathematical models themselves are attached as Appendix B.

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<sup>2</sup> As indicated in the attachment in Appendix A filed on behalf of CenturyTel, the model referenced by CenturyTel is already on file at the Authority and is available on the FCC's website

## **II. General Principles Used By The Coalition Members and Their Consultants In Preparing The Mathematical Models**

The FCC promulgated rules in In Re Implementation of Local Competition in Telecommunications Act of 1996, 11 FCC Rcd 15499 (1996) (“First Report and Order”).<sup>3</sup> In the First Report and Order, the FCC defined forward-looking economic cost as the sum of the total element long-run incremental cost in (“TELRIC”) of the element, and a reasonable allocation of forward-looking common costs First Report and Order at ¶ 672. The FCC did not at that time, and has not, to date, proposed a specific model to be used to develop rates for reciprocal compensation Instead, as an Appendix to the First Report and Order, the FCC provided rules which generally stated the principles to be used in developing such rates<sup>4</sup>

Accordingly, and as this Authority has previously recognized, as long as a model satisfies the guiding principle contained in 47 CFR §§ 51.505 and 51.511, the model is TELRIC compliant. “While no model is expected to achieve infallible results, several models will

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<sup>3</sup> The TELRIC rules were by FCC Order specifically not to be applied to rural telephone companies in the absence of a finding by the State regulatory authority that the rural exemption applicable to the rural telephone company should be removed in accordance with the provisions of Sec 251(f)(1) of the Telecommunications Act. The rules have been amended since the First Report and Order

<sup>4</sup> The preparation of TELRIC cost studies imposes a significant administrative and financial burden on the Coalition Members. The administrative burden of performing TELRIC cost studies is one factor that underlies the existing FCC policy whereby it has not applied TELRIC principles to rural companies. As the Coalition has previously argued before the TRA and this Panel, the FCC has indicated that a rural LEC is not subject to the FCC’s TELRIC pricing rules established pursuant to Section 252 of the Communications Act of 1934, as amended, unless a state regulatory authority removes the rural LECs Section 251(f)(1) exemption. Specifically, in the context of the consideration of reciprocal compensation transport and termination pricing addressed in the First Report and Order, the FCC stated in response to rural concerns regarding the potential implementation of TELRIC pricing rules “We also note that certain small incumbent LECs are not subject to our rules under Section 251(f)(1) unless otherwise determined by a State Commission. The Coalition respectfully submits this response in the spirit of cooperation with the processes established by the Authority and this Panel. However, the Coalition Members restate and adhere to their position that they have previously argued throughout this proceeding. As a matter of law and policy, the imposition of TELRIC cost methodology on the Coalition Members is inappropriate and contrary to the public interest. As the Authority and this Panel are aware, the Arbitration Order in this proceeding has not been issued. Accordingly, the Coalition reserves its right to act to the extent necessary to avoid the imposition of the administrative and economic burden associated with the performance of TELRIC cost studies, and to seek review of this Panel’s Order when it is issued and released. Additionally, the Coalition reserves the right to seek reimbursement of the cost of preparing TELRIC cost studies in this proceeding.

produce reasonably close estimates of the near-term future cost.” Interim Order on Phase 1 of Proceeding to Establish Prices For Interconnection and Unbundled Network Elements, TRA Docket No. 97-01262 (January 25, 1999) at 9. In fact, “forward-looking economic costs are inherently hypothetical in nature and are intended to reflect what costs may reasonably occur in the foreseeable future ” Id.

All of the models proposed by the Coalition Members are TELRIC compliant. However, as stated above, and previously recognized by the Authority, there is no specific or single model to be used. As long as the model produces a reasonably close estimate of the near term future cost, and is prepared in accordance with the FCC’s general rules, the model is TELRIC compliant.<sup>5</sup>

As stated above, and as discussed in detail with this Panel in the proceedings on September 7, 2005, the models provided by the Coalition Members and their consultants herein contain only the algorithms to be used. The data is not included. Certainly after a cost study which contains the data inputs is produced, parties may reasonably anticipate that there will be significant disputes regarding the results of the studies. However, the fact that there will be, or may be, disputes regarding the data inputs, should have no bearing on whether or not the models proposed by the Coalition Members and their consultants are TELRIC- compliant.

Many of the objections asserted by the CMRS Providers in their response to the Coalition’s Original Cost Study Methodology filing raised issues regarding the appropriate data to be used as inputs for the models to be used by the Coalition Members and their consultants. As was made clear in proceedings before this Panel on September 7, 2005, arguments regarding the data input are reserved for the next phase of the proceeding which would follow the

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<sup>5</sup> Each of the Coalition Members and their consultants incorporate by reference the statements made in the Cost Study Methodology and Description prepared by John Staurulakis, Inc in the section entitled “TELRIC Regulations ” Those general principles will not be restated here

submissions the Panel has required on December 7, 2005. The Coalition Members respectfully submit that it is inappropriate, inefficient, and premature to debate the appropriate data inputs to be used at this juncture.

### **III. Conclusion**

With the above general principles in mind, the Coalition Members respectfully request that this Panel determine that the models proposed by the Coalition Members and their consultants are compliant with the FCC's TELRIC methodology in the event that Coalition Members are lawfully required to establish rates based on a TELRIC methodology.

Respectfully submitted,

**NEAL & HARWELL, PLC**

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*Counsel for The Tennessee Rural Independent Coalition*

**BEFORE THE  
TENNESSEE REGULATORY AUTHORITY**

**Petition of:** )  
                        )  
**Celco Partnership d/b/a Verizon Wireless)**     **Consolidated Docket**  
**For Arbitration Under the**                           **No. 03-00585**  
**Telecommunications Act of 1996**                        )

**Parrish, Blessing and Associates  
Forward Looking Model (“FLM”)  
Transport and Termination Costs  
Submitted On Behalf Of  
Bledsoe Telephone Cooperative and  
Dekalb Telephone Cooperative, Inc.**

Parrish, Blessing and Associates (“PBA”), on behalf of Bledsoe Telephone Cooperative and Dekalb Telephone Cooperative submit this response in accordance with the statements and directions of the Arbitration Panel at the September 7, 2005 hearing in the above-referenced proceeding. Specifically the TRA asked that the rural LECs ensure that the Authority has a copy of a TELRIC or Forward Looking Cost Model that a rural LEC would propose to utilize to establish rates in the above-referenced proceeding. In addition, the TRA requested explanation regarding how the TELRIC cost model works. The following is a description of how the PBA model works. In addition, PBA incorporates by reference its previous portion of the filing submitted on behalf of the Coalition on August 11, 2005.

**FLM Overview**

The PBA forward looking cost model (“FLM”) is designed to produce TELRIC prices in accordance with the FCC’s Rules, specifically the principles set forth in 47

C.F.R. Sections 51.505 and 51.511. The FLM is an Excel spreadsheet with a number of worksheet/workpaper, input and output tabs. The version of the FLM submitted with this filing has been specifically modified to calculate only costs associated with the transport and termination of local traffic.

### **FLM Description – Transport and Termination Version**

The attached FLM is comprised of five (5) input tabs (labeled Input 1...5), three (3) worksheet tabs (labeled WS1, WS2, WS3), two (2) workpaper tabs (labeled WP 1 and WP 2) and four (4) output tabs (labeled Output 1...4).

Following is a brief description of each tab:

Input 1	Miscellaneous financial and statistical data
Input 2	Fiber ring data
Input 3	Switch data
Input 4	Facility investments
Input 5	Switching investment
Worksheet 1	Expense factors
Worksheet 2	TELRIC expense factors
Worksheet 3	Traffic and circuits
Workpaper 1	Switching
Workpaper 2	Ring
Output 1	Calculation of transport and termination unit cost
Output 2	Switching cost – local
Output 3	Switching cost – tandem
Output 4	Transport cost

For the purposes of this filing the input and worksheet/workpaper data have been populated with zeroes. All formulas and algorithms are displayed in the model. This rendition of the FLM is fully functional, has not been “protected” and can calculate if populated. In addition to displaying the algorithm in each cell the FLM also “sources” any calculated number to the relevant input or worksheet tab. The

FLM is essentially “self-documenting” given a basic understanding of TELRIC and Excel.

#### **FLM – TELRIC Compliance**

Many of the attributes that determine whether a cost is TELRIC-based are functions of the inputs. Section 51.505 of the FCC’s Rules lay out requirements for TELRIC that include: efficient network configuration, forward-looking cost of capital, depreciation rates and the allocation of common costs. The FLM accommodates these various inputs into the calculation of a TELRIC transport and termination rate. The FLM does excludes those costs, set forth in Section 51.505(d) of the Rules, that are embedded, retail, opportunity or revenues to subsidize other services.

The FLM divides the costs for transport and termination developed pursuant to Section 51.505 by the demand as set forth in Section 51.511 of the Rules to produce TELRIC transport and termination rates.

As discussed in an earlier filing the PBA, FLM has been identified as the model to be used in determining TELRIC-based rates in Puerto Rico. [can we provide a citation of where that can be found?]

**BEFORE THE  
TENNESSEE REGULATORY AUTHORITY**

**Petition of:** )  
 )  
**Cellco Partnership d/b/a Verizon** )      **Consolidated Docket**  
**Wireless For Arbitration Under the** )      **No. 03-00585**  
**Telecommunications Act of 1996**      )

**TDS Telecom – Tennessee  
Docket No. 03-00585**

**DESCRIPTION OF TELRIC COMPLIANT INTERCONNECTION COST MODEL**

As requested by the TRA on September 7, 2005, TDS TELECOM (hereafter "TDS") on behalf of its Tennessee companies: Concord Telephone Exchange, Inc , Humphreys County Telephone Company, Tellico Telephone Company, Inc. and Tennessee Telephone Company provides the requested information relating to the TDS Interconnection Model (TIM) it proposes to utilize to determine whether the TDS model is TELRIC compliant for the applicability of TELRIC wireless interconnection rates

The following information requested by the TRA includes:

1. Overview of TDS Interconnection Model and detailed explanations as to the model being TELRIC compliant,
- 2 A hard copy of the model proposed by TDS TELECOM; and
- 3 An electronic copy in Microsoft Excel with formulas, calculations and notes  
Inputs have not been included at this time as they are not required for this September 28, 2005 filing.

## **TDS Telecom Overview of TELRIC Compliant Model**

The TDS Interconnection Model (TIM) adheres to the FCC cost principles as mentioned in Section 51.505 of the FCC's rules<sup>1</sup>. The model's underlining premise is that the model utilizes long run incremental cost of switching and termination costs of TDS's network (excluding loop cost for the provision of services to wireless carriers) and includes a reasonable allocation of forward-looking common costs.

The TIM model is built utilizing the most efficient network with today's technology at the lowest cost available from TDS suppliers and is built utilizing existing locations of the wire center. The model begins by building the central offices and transport facilities of the network at each of TDS's existing locations of the wire center as allowed under section 51.505(b)(1)

TDS engineering practices and the TIM utilize an efficient network of the future based on standard engineering practices as well as the most current pricing information as available from TDS vendors. The TIM does not utilize embedded investment amounts in developing the network. The TIM, which is attached, relates forward looking investments to an overall cost which will include, a cost of money component, depreciation, taxes, maintenance, as well as a reasonable share of common costs, as define in Section 51.505 (a)(2). The TIM costs do not include retail costs such as customer service, marketing, or billing and collection costs, which is consistent of a TELRIC compliant model.

The deployment of the switches and the transport are engineered by professionals that are committed in providing innovative and consistently high quality efficient network solutions to TDS's customers. The network is built utilizing engineering specifications and practices with technology that is available today. The cost of facilities, to transport traffic within and outside the

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<sup>1</sup> FCC Part 51 – Interconnection, Subpart F – Pricing of Elements

network, will be consistent with TELRIC principals. The pricing of the switches and building of fiber is based upon the most recent contractual vendor pricing.

To determine the investment of buildings, motor vehicles, work equipment, and their associated carrying costs, the model assumes the additional investment in support assets will be the same as the existing ratio of total support assets to total direct assets.

The TIM uses the most current 3 year average expense to asset ratios from company specific income statements and balance sheets as the basis to develop forward looking direct expenses. These relationships of expenses to related assets are adjusted for inflation and other known and measurable factors. The resulting expense factors are applied to TELRIC forward looking investments to calculate projected direct, shared and common expenses on a forward looking long run incremental basis as prescribed by the FCC in Section 51.505(c)(1).

## **TDS TELECOM DETAILED EXPLANATION OF THE INTERCONNECTION MODEL**

**The following document is a detailed explanation of the inputs, calculations, and methodology of how TDS proposes to develop a TELRIC compliant interconnection cost model for use with each of the TDS Tennessee Companies.**

**NOTES:**

1. All numbers that appear in blue are inputs
2. All numbers and letters in red are in reference to this document only
3. All calculations, formulae, methods, and procedures contained, or described within, are internally developed by TDS Telecom and are the intellectual property thereof.

## **Tab #1 - Company Info & Parameters**

Tab 1 is the starting point for development of the TDS wireless interconnection rate. The base input includes the company specific exchange information as well as the data required for forward looking investment development. The following list describes the basic data entry required for the columns across the top of this tab. The parameters of the interconnection model are all located in Column D of this tab and are explained below in detail.

### **Basic Data Entry for TDS Interconnection Model:**

- A) Exchange Name – simply a written description of which exchange will occupy this particular line – most often this is the town name ( do we need to say “town name” ?)
- B) Host / Remote – data label designed to determine if this exchange will be a host or a remote within the future network
- C) Access Lines – forecasted access lines for that particular exchange – used in determining switch investment as well as transport requirements
- D) Switching Investment – This cell develops the starting investment used in the overall analysis – The development follows the below set of calculations:
  - a. For Host Switches.

$$\frac{(\text{Base Host Investment} + (\text{Variable Host Investment Per Line} \times \text{Access Lines}))}{\text{Switching Fill Factor}}$$

Base Host Investment: Input – Host\_BaseInv – Cell D25

Variable Host Investment per Line: Input – Host\_VarInv – Cell D26

Access Lines: From column C above

Switching Fill Factor: Input – Switch\_Fill - TDS internally developed forward-looking estimation of total use – Cell D23

- b. For Remote Switches:

$$\frac{(\text{Base Remote Investment} + (\text{Variable Remote Investment Per Line} \times \text{Access Lines}))}{\text{Switching Fill Factor}}$$

Base Host Investment: Input – Remote\_BaseInv – Cell D27

Variable Host Investment per Line: Input – Remote\_VarInv – Cell D28

Access Lines: From column C above

Switching Fill Factor: Input – Switch\_Fill - TDS internally developed forward-looking estimation of total use – Cell D23

- E) Switching Minutes of Use – Input – total forecasted MOU switched by that particular switching office.
- F) Interoffice Minutes of Use – Input – total forecasted interoffice MOU transported between those particular switching offices.

### **Parameters used in TDS Interconnection Model:**

The following is a list of descriptions of the parameters or inputs used in the TDS Telecom model. All values and assumptions used are designed to produce TELRIC type results. All ratios are inherently TELRIC compliant in that they are applied to forward-looking variables and are based upon forecasted expectations.

- 1) Switch Engineering – This is the percentage of overall cost associated with the planning, development, and design of the switch architecture used for this particular exchange.
- 2) Central Office Power Factor – A ratio designed to capture the associated power related equipment used for the theoretical switch. This percentage is designed to capture the batteries, grounding equipment, generators, and other critically necessary power related items for that particular exchange.
- 3) Transport Engineering – This is the percentage of overall transport related costs that is attributed to the planning, design, and development of the transmission and transport layout.
- 4) Transport Power Factor - A ratio designed to capture the associated power related equipment used for the transport equipment utilized in the theoretical network. This percentage is designed to capture the batteries, grounding equipment, generators, and other critically necessary power related items for that particular exchange.
- 5) Switch Port Fill Factor – This is the forward-looking estimate of how much of the switch will actually be used.
- 6) Transport Termination Fill Factor – This is the ratio used to develop the costs of deploying an outside plant network based on actual locations and estimation of approximate usage of that network.
- 7) Common Host Switch Investment – This is the dollar amount that is used as a base investment for Host Switches. It will be a number developed based on forward-looking starting investment in developing a switching network at each host type exchange.
- 8) Variable (per Line) Host Switch Investment – This is the dollar amount per line that is added to the base Host Switch investment to “grow” the switch to the appropriate size under a future environment. It is important to note that only lines that will actually be switched in that particular exchange will receive this additive.
- 9) Common Remote Switch Investment - This is the dollar amount that is used as a base investment for Remote Switches. It will be a number developed based on forward-looking starting investment in developing a switching network at each remote type exchange.
- 10) Variable (Per Line) Remote Switch Investment - This is the dollar amount per line that is added to the base Remote Switch investment to “grow” the switch to the

appropriate size under a future environment. It is important to note that only lines that will actually be switched in that particular exchange will receive this additive.

- 11) Main Distribution Frame (Per Line) – This is the forward-looking per line cost of a Main Distribution Frame.
- 12) Business Days Per Month – The actual number of annual business days.
- 13) Percent of Daily MOU Assigned to Busy Hour – A forward-looking percentage estimate of how many of the daily calls will occur during the busiest hour of the day.
- 14) Maximum Trunk Occupancy in CCS – An industry standard capacity in CCS's on a trunk.
- 15) Trunks per DS-1 – 24.
- 16) DS-1s per DS-3 – 28.
- 17) Transmission Multiplexing (DS-3) Per Card (1 DS-3) – An estimated dollar amount cost of one DS-3 card in a carrier-class type OC-XX transmission system.
- 18) Transmission Multiplexing (DS-1) Per Card (7 DS-1s) – An estimated dollar amount cost of one DS-1 card (capable of muxing 7 DS-1s) in a carrier-class type OC-XX transmission system.
- 19) Digital Cross Connect (DS-1) Per 84 DS-1s – The dollar amount of investment required to provide digital cross connection at that particular exchange with a maximum of 84 DS-1s per unit. This dollar amount is broken down into a per DS-1 investment.
- 20) Transmission Terminal OC-3 – The forward-looking base investment of a carrier-class OC-3 terminal and associated electronics.
- 21) Transmission Terminal OC-12 – The forward-looking base investment of a carrier-class OC-12 terminal and associated electronics.
- 22) Transmission Terminal OC-48 – The forward-looking base investment of a carrier-class OC-48 terminal and associated electronics.
- 23) Transmission Terminal OC-96 – The forward-looking base investment of a carrier-class OC-96 terminal and associated electronics.
- 24) Average Fiber Investment Per Foot – This variable is determined by developing the percentage probability of each type of fiber for each TDS company and multiplied by the associated future estimates of costs aligned with each type. The result is then summed to arrive at a forward-looking estimate of investment in each foot of fiber plant. (See table on the bottom of the Company Info & Parameters tab).

## **Tab #2 - ACF Calculations**

This tab contains the annual charge factor calculations used in the TDS Interconnection Model. All numbers in blue represent inputs. The first set of inputs, or parameters, are contained within column M, and are described below. The other inputs used in this tab are in columns R and S, and represent “financial type” information. The following list details the parameters used and provides an overview of how they are used in the model.

- 1) Digital Switching Life – The number of years over which the digital switching equipment is to be depreciated.
- 2) Circuit Equipment Life – The number of years over which the circuit type electronics (transmission equipment) is to be depreciated.
- 3) Outside Plant Life – The number of years over which the physical fiber cable is to be depreciated.
- 4) Digital Switching Salvage Value – A percentage value input that is the representative cost of removing the equipment.
- 5) Circuit Equipment Salvage Value – A percentage value input that is the representative cost of removing the equipment.
- 6) Outside Plant Salvage Value – A percentage value input that is the representative cost of removing the outside plant.
- 7) Cost of Money – This is the future cost of capital developed from Debt Cost, Debt Percentage, and Equity Percentage and Equity Cost.
- 8) Debt Cost – This is the company’s forward-looking weighted average cost of debt.
- 9) Debt % – This is the company’s forward-looking debt level percentage of total capital.
- 10) Equity Cost – This is the company’s forward-looking cost of equity.
- 11) Effective Income Tax Rate – This is the percentage representation of the company’s composite tax rate.

- 12) Equity Gross-Up Factor – This is a calculation used to allow for taxes. Please see formula description below:

$$\frac{\text{Effective Income Tax Rate}}{(1 - \text{Effective Income Tax Rate})} * \frac{\text{Equity Cost} * (1 - \text{Debt \%})}{\text{Cost of Money}}$$

- 13) Labor Inflation Rate – The percentage increase of forecasted labor costs over a year by year period for a highly trained and dedicated staff to manage, repair, and service customers that use the forward-looking network.
- 14) Non-Labor Adjustment Rate – The percentage increase or decrease of non-labor related expenses; (can include such items as power costs, gasoline, and insurance)
- 15) Motor Vehicle – The economic life of a motor vehicle.
- 16) Aircraft – The economic life of aircraft.
- 17) Special Purpose Vehicle – The economic life of special purpose vehicles.
- 18) Garage Work Equipment – The economic life of garage work equipment.
- 19) Other Work Equipment – The economic life of other work equipment.
- 20) Land and Buildings – The economic useful life of such.
- 21) Furniture and Artwork – The economic useful life of such.
- 22) Office Equipment – The economic useful life of such.
- 23) General Purpose Computers – The economic useful life of such.

All formulas contained within this tab reference only data available within the tab and are easily audited using Excel's built in auditing functions. The calculations contained within this tab yield an annual charge factor for each of the investment categories used, that is TELRIC compliant in both development procedures and in results.

### **Tab #3 - Switch Calculations**

This tab contains the key calculations used to develop the forward-looking cost of the switching assets necessary to accomplish the basic switching requirements of interconnection with a wireless carrier. The lower sections of this tab, referenced below by 1 - 10, are the calculations that develop the overall investment required. The upper section of this tab, referenced below as A - R, are the development of costs associated with the below section's developed theoretical investments. Both the Company Info & Parameters tab and the ACF Calculations tabs are referenced within this tab. As with any fully functional, unprotected Excel workbook, all functions, formulae, and calculations are easily followed by using the built in auditing functions found in Excel.

#### **Cost Development Calculations (Upper portion of the tab)**

- A) Total Common Switching Investment – The sum of the Total Switching Electronics column. (Column H – Labeled #7)
- B) Total Main Dist. Frame Investment – The sum of the Main Dist Frame and Protection column (Column I – Labeled #8)
- C) Total End Office Switching Investment – Summation of A & B above
- D) Annual Cost Basis For Switching – Total End Office Switching Investment ( A ) multiplied by the base annual charge factor for digital switching (Cell H18 of the ACF Calculations Tab)
- E) Annual Cost Basis for Main Distribution Frame – Total Main Dist Frame Investment ( B ) multiplied by the base annual charge factor for digital switching (Cell H18 of the ACF Calculations Tab)
- F) Allocation of Direct Switching Expenses – Total End Office Switching Investment (Total End Office Switching Investment ( A ) + Total Main Dist Frame Investment ( B )) multiplied by the direct portion of the digital switching annual charge factor (Cell H26 of the ACF Calculations tab)
- G) Allocation of Shared Expenses – Total End Office Switching Investment (Total End Office Switching Investment ( A ) + Total Main Dist Frame Investment ( B )) multiplied by the shared portion of the digital switching annual charge factor (Cell H49 of the ACF Calculations tab)
- H) Allocation of Common Expenses – Annual Cost Basis for Switching ( D ) plus the Annual Cost Basis for Main Dist. Frame ( E ) multiplied by the common portion of the digital switching annual charge factor (Cell H68 of the ACF Calculations tab)
- I) Total Switching Related Costs – Total Switching Related Costs ( D + E )
- J) Total Switching Related Expenses – Summation of Allocation of Direct Switching Expenses ( F ), Allocation of Shared Expenses ( G ), and Allocation of Common Expenses ( H )

- K) Total Annual Switching Costs – Total Switching Related Costs ( I ) + Total Switching Related Expenses ( J )
- L) Allocated Costs to Ports (Access Lines) – Total Annual Switching Costs ( K ) multiplied by the NTS portion of the switch (30%)
- M) Allocated Costs to Switching (MOU Demand) – Total Annual Switching Costs ( K ) multiplied by the TS portion of the switch (70%)
- N) Total Access Lines – Summation of Access Lines (Column D – Labeled #3)
- O) Total MOU – Total Minutes of Use (Company Info & Parameters Tab – Summation of cells F6 through F15)
- P) Annual Per Port Cost – Allocated Costs to Ports ( L ) divided by Total Access Lines ( N )
- Q) Monthly Per Port Cost – Annual Per Port Cost ( P ) divided by 12 months
- R) Cost Per MOU – Allocated Costs to Switching (MOU Demand) ( M ) divided by Total MOU ( O )

**Investment Development Calculations (Lower portion of the tab)**

- 1) Exchange Name – A written description of which exchange will occupy this particular line (Direct feed from Company Info & Parameters tab, Cells B6 through B15)
- 2) Host / Remote – Data label designed to determine if this particular exchange will be a host exchange or a remote exchange in the future theoretical network (Direct feed from the Company Info & Parameters tab, Cells C6 through C15)
- 3) Access Lines – Forecasted access lines for that particular exchange (Direct feed from the Company Info & Parameters tab, Cells D6 through D15)
- 4) Switching Investment – As described with the write-up for the Company Info & Parameters tab, as the calculation actually occurs on that tab. (Direct feed from the Company Info & Parameters tab, Cells E6 through E15)
- 5) Engineering – Switching Investment in Column E (Labeled #4) multiplied by the Switch Engineering Percentage (Company Info & Parameters tab, Cell D19)
- 6) Power – Switching Investment in Column E (Labeled #4) multiplied by the Switch Engineering Percentage (Company Info & Parameters tab, Cell D20)
- 7) Total Switching Electronics – Summation of Switching Investment ( 4 ), Engineering ( 5 ), and Power ( 6 )
- 8) Main Dist Frame and Protection – Access Lines ( 3 ) multiplied by the Main Distribution Frame (Per Line) parameter (Company Info & Parameters tab, Cell D29)

- 9) Total Switch Related Investments – Summation of Total Switching Electronics ( 7 )  
and Main Dist Frame and Protection ( 8 )
- 10) Row 31 of this tab contains summations of the above investment related information.

#### **Tab #4 - Transport Calculations**

This tab contains the key calculations used to develop the forward-looking cost of the transmission and transport investments necessary to accomplish interconnection with a wireless carrier. The lower sections of this tab, referenced below by 1 - 12, are the calculations that develop the overall investment required. The upper section of this tab, referenced below as A - Q, are the development of costs associated with the below section's developed theoretical investments. Both the Company Info & Parameters tab and the ACF Calculations tabs are referenced within this tab. As with any fully functional, unprotected Excel workbook, all functions, formulae, and calculations are easily followed by using the built in auditing functions found in Excel.

#### **Cost Development Calculations (Upper portion of the tab)**

- A) Total Transmission Terminal Investment – Summation of Required Transmission Terminal Investment (Column K – Labeled #10).
- B) Total Digital Cross Connect Investment – The sum of the Required Digital Cross Connection Investment (Column L – Labeled #11).
- C) Total Interoffice Facility Investment – Overall forward-looking fiber investment calculated in (Q) and summarized here.
- D) Total Transmission Investment – Total Transmission Terminal Investment (A) + Total Digital Cross Connect Investment (B) + Total Interoffice Facility Investment (C).
- E) Annual Cost Basis of Terminal – Total Transmission Terminal Investment (A) multiplied by the base annual charge factor for circuit and termination equipment (Cell I18 of the ACF Calculations Tab).
- F) Annual Cost Basis of Digital Cross Connect – Total Digital Cross Connect Investment (B) multiplied by the base annual charge factor for circuit and termination equipment (Cell I18 of the ACF Calculations Tab)
- G) Annual Cost Basis of Facility – Total Interoffice Facility Investment (C) multiplied by the base annual charge factor for outside plant cable and equipment (Cell J18 of the ACF Calculations Tab).
- H) Allocation of Direct Transport Expenses – Total Transmission Terminal Investment (A) plus the Total Digital Cross Connect Investment (B) multiplied by the direct portion of the circuit and termination equipment annual charge factor (Cell I26 of the ACF Calculations Tab) then added to Total Interoffice Facility Investment (C) multiplied by the direct portion of the outside plant cable and equipment annual charge factor (Cell J26 of the ACF Calculations Tab).
- I) Allocation of Shared Expenses - Total Transmission Terminal Investment (A) plus the Total Digital Cross Connect Investment (B) multiplied by the shared portion of the circuit and termination equipment annual charge factor (Cell I49 of the ACF Calculations Tab) then added to Total Interoffice Facility Investment (C) multiplied

by the direct portion of the outside plant cable and equipment annual charge factor (Cell J49 of the ACF Calculations Tab)

- J) Allocation of Common Expenses – Annual Cost Basis of Terminal ( E ) plus Annual Cost Basis of Digital Cross Connect ( F ) multiplied by the common portion of the circuit and termination equipment annual charge factor (Cell I68 of the ACF Calculations tab) then added to the Annual Cost Basis of Facility ( G ) multiplied by the common portion of the outside plant cable and equipment annual charge factor (Cell J68 of the ACF Calculations tab)
- K) Total Annual Transmission Costs – Summation of Annual Cost Basis of Terminal ( E ), Annual Cost Basis of Digital Cross Connect ( F ), Annual Cost Basis of Facility ( G ), Allocation of Direct Transport Expenses ( H ), Allocation of Shared Expenses ( I ), and Allocation of Common Expenses ( J ).
- L) Total Costs (MOU Demand) – Total Annual Transmission Costs ( K ) direct feed from cell F14.
- M) Total MOU - Total Interoffice Minutes of Use from column E below (Labeled #4).
- N) Cost Per MOU – Total Costs (MOU Demand) ( L ) divided by Total MOU ( M )
- O) Composite Airline Miles – Composite miles of interoffice fiber needed to transport traffic between wire centers (Direct feed from the Company Info & Parameters tab, Cell H6).
- P) Total Footage of Interoffice Route – Composite Airline Miles ( O ) multiplied by the number of feet per mile.
- Q) Overall Fiber Investment – Total Footage of Interoffice Route ( P ) multiplied by the forward-looking developed cost of fiber per foot (Direct feed from the Company Info & Parameters tab, Cell D42).

#### Investment Development Calculations (Lower portion of the tab)

- 1) Exchange Name – Simply a written description of which exchange will occupy this particular line (Direct feed from Company Info & Parameters tab, Cells B6 through B15).
- 2) Host / Remote – Data label designed to determine if this particular exchange will be a host exchange or a remote exchange in the future theoretical network (Direct feed from the Company Info & Parameters tab, Cells C6 through C15).
- 3) Access Lines – Forecasted access lines for that particular exchange (Direct feed from the Company Info & Parameters tab, Cells D6 through D15).
- 4) Allocated Interoffice Minutes of Use – Interoffice MOU (Company Info & Parameters Tab – Summation of cells G6 through G15).

- 5) Busy Hour MOU Trunk Demand – This calculation develops the number of DS-1s required to transport the interoffice MOU. The calculation works as follows; Allocated Interoffice Minutes of Use (#4) multiplied by Seconds per Minute (60) all divided by Business Day per Year (Company Info & Parameters, Cell D30). This result is then multiplied by the Busy Hour Percentage (Company Info & Parameters, Cell D31) with the whole thing then being divided by the number of seconds in one CCS (One Hundred Seconds – 100). This result is then divided by the Maximum Trunk Capacity CCS (Company Info & Parameters, Cell D32) to arrive at the required DS-1s.
- 6) Required DS-1 Appearances at Each End Office – This calculation determines the number of DS-1s at each end office per the following formula; Busy Hour MOU Trunk Demand (#5) divided by Trunks per DS-1 (Company Info & Parameters Tab, Cell D33). This result is then rounded up to the next whole number.
- 7) Required DS-3s to Support MOU Demand – A calculation that converts the Required DS-1 level to DS-3 level per the calculation; Required DS-1 Appearances at Each End Office (#6) divided by DS-1s per DS-3 (Company Info & Parameters Tab, Cell D34). The result must be at least one, and therefore the calculation is properly rounded.
- 8) Transmission Terminal Investment – Determines the fiber terminal investment based upon the number of DS-3s required. If the total number of DS-3s is less than 3,12, or 48, then the corresponding investment is used per the table in the parameters section of the Company Info & Parameters Tab (Cells D38 through D41).
- 9) Transmission Multiplexing Equipment Investment – Determines the investment required in DS-3 Multiplexing Cards. Required DS-3s to Support MOU Demand (#7) multiplied by the per Card Cost of DS-3s (Company Info & Parameters Tab, Cell D35) plus the appropriate number of DS-1 Cards: Required DS-1 Appearances at Each End Office (#6) divided by card capacity (7), rounded properly, and then multiplied by the per Card Cost of DS-1s (Company Info & Parameters Tab, Cell D36).
- 10) Required Transmission Terminal Investment – Addition of Transmission Terminal Investment (#8) and Transmission Multiplexing Equipment Investment (#9) both multiplied by one plus the Transport Engineering and Power Ratios (Company Info & Parameters Tab, Cell D21, and Cell D22) all divided by the Transport Fill Factor (Company Info & Parameters Tab, Cell D24).
- 11) Required Digital Cross Connection Investment – The calculation used to develop the proper cost of digital cross connection panels. Required DS-1 Appearances at Each End Office (#6) multiplied by the DSX Cost per DS-1 (Company Info & Parameters Tab, Cell D37) all divided by the Transport Fill Factor (Company Info & Parameters Tab, Cell D24).
- 12) Row 29 of this tab contains simple summations of the above investment related information.

### Tab #5 - Results

This tab contains a summarization of all results calculated in both the Switching Calculations and Transport Calculations tabs. It is designed to be a one page summary of all relevant costs associated with providing the switching and transport services to wireless carriers utilizing TELRIC study methodology. The three sections on this tab represent the key components of providing such interconnection services; the switching, the transport, and the development of the rate. Included in this section is a cost of complying – model modification, legal fees and regulatory time incurred as a result of preparing, filing, responding to TRA and CMRS data requests, testimony, and hearings concerning the TDS TELRIC compliant cost model – within Docket No. 03 -00585 cost model review.

**BEFORE THE  
TENNESSEE REGULATORY AUTHORITY**

**Petition of:** )  
                        )  
**Celco Partnership d/b/a Verizon Wireless)**     **Consolidated Docket**  
**For Arbitration Under the**                            )  
**Telecommunications Act of 1996**                        )

**CenturyTel of Adamsville, Inc.,  
CenturyTel of Claiborne, Inc., and  
CenturyTel of Ooltewah-Collegedale, Inc.  
Cost Study Methodology and Description**

CenturyTel of Adamsville, Inc , CenturyTel of Claiborne, Inc , and CenturyTel of Ooltewah-Collegedale, Inc (collectively referred to as “CenturyTel”) submit this response in accordance with the statements and directions of the Arbitration Panel at the September 7, 2005 hearing in the above-referenced proceeding<sup>1</sup>. Specifically the TRA asked that the rural LECs ensure that the Authority has a copy of a TELRIC cost model that the rural LEC would propose to utilize to establish rates in the above-referenced proceeding. The TRA also requested explanation regarding how the TELRIC cost model works.

In the event that CenturyTel is lawfully required to utilize a TELRIC cost methodology to establish rates in this or any other proceeding, CenturyTel would utilize the Hatfield (HAI) model, consistent with the information provided to the TRA by the Rural Coalition of Small Local Exchange Carriers and Cooperatives (the “Coalition”) on behalf of CenturyTel and other rural LECs on August 11, 2005

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<sup>1</sup> In addition, PBA incorporates by reference its previous portion of the filing submitted on behalf of the Coalition on August 11, 2005

CenturyTel recognizes that the TRA is already fully familiar with the specifics of the HAI model and the details regarding how this cost model methodology works. The TRA has previously recognized that “While no model is expected to achieve infallible results, several models will produce reasonably close estimates of the near-term future costs.”<sup>2</sup> The TRA further noted that the Hatfield model is not “inherently inconsistent with the FCC’s TELRIC methodology.”<sup>3</sup>

In order to avoid placing an otherwise unnecessary procedural and administrative burden on the TRA, CenturyTel respectfully responds to the September 7 request for information regarding a specific TELRIC cost methodology by referring all parties to the well established HAI model as the cost model methodology that CenturyTel would utilize if and when it is lawfully required to establish rates on a TELRIC basis. The model itself and supporting documentation are already on file with the TRA so there is no need to duplicate that filing herein. CenturyTel further refers the parties to the existing TRA analysis and approval of this model. The model can also be obtained from the FCC’s website at <http://www.fcc.gov/wcb/tapd/hcpm/welcome.html>

As the Coalition has noted previously before the TRA, the FCC has indicated that a rural LEC such as CenturyTel is not subject to the FCC’s TELRIC pricing rules under Sec. 252 of the Communications Act of 1934, as amended, unless a state regulatory authority first removes the rural LEC’s Sec. 251(f)(1) exemption in a formal proceeding initiated pursuant to a carrier request where the burden of proof for removal of the

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<sup>2</sup> Docket No. 97-01262, “Petition to Convene a Contested Proceeding to Establish Permanent Prices for Interconnection and Unbundled Network Elements,” Interim Order issued January 25, 1999, p. 9

<sup>3</sup> *Id.*

exemption is upon the requesting party. Specifically in the context of reciprocal compensation transport and termination pricing addressed in its August 8, 1996 Interconnection Order, the FCC stated in response to rural concerns regarding the potential imposition of TELRIC pricing rules. "We also note that certain small incumbent LECs are not subject to our rules under section 251(f)(1) unless otherwise determined by a State Commission." The administrative burden of performing TELRIC cost studies, for example, is but one factor that determined the existing FCC policy of TELRIC being not applicable to rural companies. This and other matters related to the presumed adverse impact on universal service and economic burden on a rural LEC would have to be addressed by a requesting party in a formal 251 (f) (1) proceeding.

While CenturyTel respectfully submits this response in the spirit of cooperation with the processes established by the Authority, CenturyTel restates and adheres to the position that the Coalition has set forth throughout this proceeding. The imposition of TELRIC cost methodology on CenturyTel and other rural LECs has no legal basis under current law and is contrary to the public interest. In addition and as the Authority is aware, no Arbitration Order in this proceeding has been issued. Accordingly, CenturyTel reserves its right to act to the extent necessary to comply with existing law, to require the compliance of others with existing law, to avoid the imposition of the administrative and economic burden associated with the performance of TELRIC cost studies, and to seek review of the Authority's Order when it is issued and released.

BEFORE THE  
TENNESSEE REGULATORY AUTHORITY

Petition of: )  
                  )  
**Cellco Partnership d/b/a Verizon Wireless)**      **Consolidated Docket**  
**For Arbitration Under the                            )**      **No. 03-00585**  
**Telecommunications Act of 1996                    )**

**CHR Solutions  
Forward Looking Model (“FLM”)  
Transport and Termination Costs  
Submitted On Behalf Of  
North Central Telephone Cooperative, Inc,**

CHR Solutions (“CHR”), on behalf of North Central Telephone Cooperative, Inc, submits this response in accordance with the statements and directions of the Arbitration Panel made at the September 7, 2005 hearing in the above-referenced proceeding. Specifically the TRA asked that the rural LECs ensure that the Authority has a copy of a TELRIC or Forward Looking Cost Model that a rural LEC would propose to utilize to establish rates in the above-referenced proceeding. In addition, the TRA requested explanation regarding how the TELRIC cost model works. The following is a description of how the CHR model works. In addition, CHR incorporates by reference its previous portion of the filing submitted on behalf of the Coalition on August 11, 2005

CHR has prepared a model in the form of an Excel spreadsheet that is divided into three basic sections: investment; operating expenses and taxes and rate development. The sub-categories contained in those three sections should be self-explanatory

Using this model, the Forward-Looking Economic Cost (“FLEC”) that will be developed for Central Office Transmission and Cable and Wire Facilities Inter-Exchange

and Exchange Trunk (EAS) equipment will be based upon engineering estimates. That elemental cost will be assigned to Transport Cost.

In order to determine switching costs, the CHR will identify and quantify Central Office traffic switching, and determine the FLEC cost for the traffic-sensitive switching.

As additional inputs into this model, CHR will develop company specific carrying charge ratios (CCR) in accordance with the following. First, account-specific, equipment and expense will be divided by the total company Central Office equipment plus the cable and wire facilities investment from the company's records. Accounts-specific common CCRs will be applied to the sum of switching, tandem switching, and transport investment.

Plant-specific expense will be divided by the total company Central Office equipment cost or cable and wire facilities cost (as appropriate) from the company's financial and accounting records. A plant-specific CCR will be applied to the cost of equipment investment (switching and/or tandem switching), or transport investment as appropriate.

Depreciation expense will be based on the economic lives of plant categories. Accumulated depreciation reserves will be developed from net present value analysis of economic lives and assigned as appropriate to plant categories.

The switching rate element will equal the switching revenue requirement divided by the total (local access/toll and inter-connection) traffic sensitive switched minutes of use. Similarly, the tandem switching rate will equal the tandem switching revenue requirement divided by inter-exchange (access/toll and inter-connection) traffic sensitive minutes of use. The transport rate will equal the transport revenue requirement divided

by inter-change (access/toll and inter-connection) traffic sensitive minutes of use. The total revenue requirement is equal to the return on net investment, plus expenses assigned to each element.

As a result of the calculations evidenced by the spreadsheet submitted by CHR, the annual demand cost per minutes of use will be calculated for the switching, tandem switching and transport elements, individually and as a total.

In summary:

- FLEC developed for Central Office Transmission and Cable & Wire Facilities Inter-exchange and Exchange Trunk (EAS) equipment based upon engineering estimates. Assigned to Transport.
- Central Office Switching traffic sensitive FLEC identified. Assigned to Switching
- Company specific Carrying Charge Ratios (CCR) are developed as follows:
  - Account-specific Common Equipment / Expense is divided by Total Company COE + CWF investment from Company records
  - Account-specific Common CCRs are applied to sum of Switching, Tandem Switching and Transport investment.
  - Plant Specific Expense is divided by Total Company COE or CWF (as appropriate) from Company records.
  - Plant Specific CCR is applied to COE investment (Switching, Tandem Switching) or Transport investment (Transport) as appropriate.
- Depreciation Expense based on economic lives of plant categories. Accumulated Depreciation Reserves developed from Net Present Value analysis of economic lives and assigned as appropriate to plant categories.
- Revenue Requirement is equal to Return on Net Investment plus expenses assigned to each element.
- Switching Rate = Switching Revenue Requirement divided by Total (Local, Access/Toll and Interconnection) Switched MOU.

- Tandem Switching Rate = Tandem Switching Revenue Requirement divided by Interexchange (Access/ Toll and Interconnection) Switched MOU.
- Transport Rate = Transport Revenue Requirement divided by Interexchange (Access/Toll and Interconnection) Switched MOU.

**BEFORE THE  
TENNESSEE REGULATORY AUTHORITY**

**Petition of:** )  
                        )  
**Cellco Partnership d/b/a Verizon Wireless)**     **Consolidated Docket**  
**For Arbitration Under the**                            )  
**Telecommunications Act of 1996**                        )

**Totherow, Haile & Welch and Lee Olch Consulting  
Forward Looking Model ("FLM")  
Transport and Termination Costs  
Submitted On Behalf Of  
Twin Lakes Telephone Cooperative Corporation**

The Tennessee Regulatory Authority (TRA) ordered that the Total Element Long-run Incremental Cost (TELRIC) models that will be used to develop interconnection (transport and termination) rates in TRA Docket No. 03-00585 be submitted to the TRA on September 28, 2005. The TRA will evaluate compliance of the models with TELRIC standards. The TELRIC cost model to be used for the Twin Lakes Telephone Cooperative (TLTC) cost study is included in this filing in electronic and hard copy versions.

We also provide the following analysis of the TELRIC standards that demonstrates how our cost model and cost study procedures are compliant with TELRIC standards. The analysis identifies four characteristics of the standards. First, the standards primarily specify requirements for inputs and outputs (calculated results) for a model, not for the algorithms in a model. Second, the standards specify classifications or general types of inputs, but they do not prescribe the number of inputs or the methodology for developing inputs. Third, the standards contemplate three separate and distinct studies.

cost measurement, network design, and demand. We address each of the three studies below. Fourth, the completed cost study (including all inputs, algorithms, and outputs for network design, cost measurement, and demand projection) taken as a whole must conform to the standards set forth in the FCC's Part 51.505 and 51.511 rules. The final section below analyzes this standard.

## I. Cost Measurement

Interconnection rates for transport and termination must conform to the 51.503(b)(1) requirement for "forward-looking economic cost-based pricing methodology". Per 51.505(a) the "forward-looking cost of an element [FLEC] equals the sum of" two cost components:

$$\text{FLEC} = \text{Total Element Long-run Incremental Cost} + \text{Forward-Looking Common Cost}$$

TELRIC is the forward-looking cost of the "total quantity of the facilities and functions" that are directly attributable to a specific element. 51.505(b). The "direct" costs mentioned in the rules include plant, cost of capital, and depreciation rates. Other direct costs, not specifically mentioned by the rules, are included in developing TELRIC including day-to-day operating and tax expenses associated with the elements, income taxes, and shared costs such as power and network administration that are attributable to two or more elements. Thus, the value of the TELRIC component is:

$$\text{TELRIC} = \text{Capital Cost} + \text{Depreciation Expense} + \text{Direct Operating Expense} + \text{Shared Operating Expense} + \text{Income Tax}$$

The second component of FLEC, Forward-looking Common Costs are those “that cannot be attributed to individual elements or services”. 51.505(c)(1)

In addition to specifying the two major cost components of forward-looking cost, the FCC specified four types of costs and cost data that may not be included in FLEC. “Embedded costs”, “retail costs”, “opportunity costs”, and “revenues to subsidize other services” are proscribed from being included.

In conclusion, the cost measurement standards specify several classifications of costs that are to be summed to develop the FLEC of network elements. The summation algorithm is the only algorithm specified in the TELRIC rules. All other references in the sections 51.505 and 51.511 are to inputs and outputs. Our model includes the cost inputs needed to compute the algorithms prescribed by the TELRIC rules. Part 51 rules have other cost standards concerning what costs must be measured, but these standards are better understood as network design requirements.

## **II. Network Design**

Part 51 505(b)(1) states three network design standards for the forward-looking network that is the basis for the TELRIC study: “most efficient telecommunications technology currently available”, “lowest cost network configuration”, and “existing location of the incumbent LEC’s wire centers”. Only the last requirement provides an algorithm: existing wire center = forward- looking wire center. The other two standards specify requirements for (1) the results of the network design study and (2) the network components for which costs must be measured to develop the inputs for cost model.

Most Efficient Technology. The rules do not prescribe algorithms for choosing the most efficient technology. It is the norm in TELRIC studies to include digital switches and SONET on fiber optic rings to conform to this standard. The inputs for our cost model will include costs for these technologies and related network configurations

Lowest Cost Network Configuration. The rules do not prescribe algorithms for designing the lowest cost network configuration. Engineers do use algorithms for network design, but different engineers will reach different conclusions about the design of a lowest cost network configuration for a specific company. This is due in part to differences in education and experience, but even more important is the analysis and judgment that is inherent in designing a forward-looking network. Developing a low cost, most efficient network design for current operating conditions (service mix, demographics, demand, climate, geography, service area size, interconnection with contiguous exchange carriers, grade of service standards required by customers, Universal Service requirements, and lenders, etc.) is a challenging problem of acquiring the right information and making reasonable design trade-offs among competing and conflicting design objectives. A forward-looking network design is more complicated due to the need to forecast changes in operating conditions.

In conclusion, the TELRIC rules for network design state the results of a network design study, i.e. a most efficient, lowest cost network using existing wire centers. The rules do not prescribe algorithms to design A network with these characteristics. A primary task of a TELRIC study is to obtain from the telephone company engineers their design for a most efficient technology, lowest LOW cost network, using existing wire centers, that is consistent with trends in the company's operating conditions. The

network design study is currently under way. Our cost model does not include algorithms for the design of this network, but it will include inputs that represent the costs of a forward-looking network (designed by TLTC engineers) as required by TELRIC rules

### **III. Demand (Traffic) Forecast**

Part 51.511(a) provides the only required algorithm for developing demand.

Total Number of Units = Number of Units Provided to Other Carriers + Number of Units Used by ILEC Customers

The rule further states three methodology standards for developing demand.

- Units to Count The units to be counted are the ones that carriers and ILEC customers are “likely to use”.
- Time Period for Measurement. Traffic is to be studied “during a reasonable measuring period”.
- Forecast Demand. There must be a “reasonable projection” of the demand.

In conclusion, the TELRIC rules define a classification of units to be included in total demand, what units are counted, the time period for measurement, and the result of demand forecasting. These standards are general requirements for developing the demand input(s) for the model, but they do not prescribe specific algorithms or an approach. We are in the process of measuring actual, current switched traffic on TLTC's network. These measurements along with evidence of traffic trends over time will be the basis for forecasting demand. That measure of demand will be an input to our cost model.

#### **IV. Cost Study as a Whole**

Section 51.505(e) states that the cost study must comply with the methodology in sections 51.505 and 51.511. A cost study includes everything involved in completing a cost study and developing interconnection rates inputs, model, and results of cost measurement, network design, and demand forecast studies. A cost model (for which Part 51 prescribes some algorithms) is a small part of a complete TELRIC cost study. The largest part of a TELRIC study involves the network design, measurement of the cost of network components, and demand measurement as steps in the development of inputs; Part 51 prescribes the characteristics of these inputs and results, but not the algorithms for their development.

The Section 51.505(e) standard is to evaluate a completed cost study for compliance with TELRIC standards. That is what the TRA did in 1999 in *Interim Order on Phase I of Proceeding to Establish Prices for Interconnection and Unbundled Network Elements*, Docket No 97-01262, January 25, 1999. At that point, only after Bell South Telecommunications (BST) had completed its cost study, did the TRA evaluate the compliance of BST's cost study with TELRIC standards and order some adjustments.

For reasons that are not known to TLTC's cost analysts, in this proceeding the TRA has been urged to evaluate intermediate stages of the TELRIC model itself for compliance with TELRIC standards. We are confident that our model submitted today complies with TELRIC standards. We note, though, that today's submission is in isolation from the rest of the cost study that is currently being prepared. And we look forward to submitting a completed cost study to the TRA on December 7, 2005 that also conforms to TELRIC standards.

BEFORE THE  
TENNESSEE REGULATORY AUTHORITY

Petition of: )  
                  )  
Cellco Partnership d/b/a Verizon Wireless )      Consolidated Docket  
For Arbitration Under the                   )      No. 03-00585  
Telecommunications Act of 1996           )

**John Staurulakis, Inc.  
Cost Study Methodology and Description**

In accord with the *Procedural Schedule for Rate Phase of Proceeding* in the above captioned consolidated docket, John Staurulakis, Inc. (JSI) provided a lengthy and comprehensive summary of its proposed cost study methodology. Despite this description and a detailed response by the CMRS providers, the Tennessee Regulatory Authority (TRA) has requested a copy of the JSI model and a description of the same. In this document, JSI provides the TRA with its model and a further description. JSI incorporates as part of this description its initial summary already provided to the TRA. JSI notes the CMRS response to JSI's model contained many factual inaccuracies and mischaracterizations. At some point in this proceeding, JSI welcomes the opportunity to respond to the CMRS response.

The JSI model will be used to perform cost studies compliant with Federal Communications Commission's (FCC's) rules. The following ILECs will use JSI's model Ardmore Telephone Company, Inc. (Ardmore), Ben Lomand Rural Telephone Cooperative (Ben Lomand), Crockett Telephone Company, Inc. (Crockett), Highland Telephone Cooperative (Highland), Loretto Telephone Company, Inc (Loretto),

Millington Telephone Company (Millington), Peoples Telephone Company, Inc. (Peoples), United Telephone Company (United), West Tennessee Telephone Company, Inc. (West Tennessee) and Yorkville Telephone Cooperative (Yorkville).

### TELRIC Regulations

The FCC does not have a specific model it uses or proposes that state commissions use to develop rates for reciprocal compensation. The FCC rule for rates for transport and termination is found in 51.705:

*§51 705 Incumbent LECs' rates for transport and termination*

- (a) An incumbent LEC's rates for transport and termination of telecommunications traffic shall be established, at the election of the state commission, on the basis of:*
- (1) The forward-looking economic costs of such offerings, using a cost study pursuant to §§51 505 and 51 511;*
- (2) Default proxies, as provided in §51.707; or*
- (3) A bill-and-keep arrangement, as provided in §51 713*
- (b) In cases where both carriers in a reciprocal compensation arrangement are incumbent LECs, state commissions shall establish the rates of the smaller carrier on the basis of the larger carrier's forward-looking costs, pursuant to §51 711*

Rather than require the use of a specific model, FCC rules permit a carrier to establish forward looking economic cost consistent with specific guiding principles. As referenced in 51.705(a)(1), these guiding principles are found in 47 CFR §§ 51.505 and 51 511. When a model satisfies these principles, the model is *per se* TELRIC compliant (JSI will use the term TELRIC as it is used by the TRA, the FCC's requirements require FLEC or forward-looking economic cost. The difference between TERLIC and FLEC is stated in 47 CFR § 51 505(a)).

As a guide for this description, JSI will quote each subpart of these rules and describe how the model satisfies each requirement.

**§51.505 Forward-looking economic cost.**

- (a) In general. The forward-looking economic cost of an element equals the sum of.
- (1) The total element long-run incremental cost of the element, as described in paragraph (b), and
  - (2) A reasonable allocation of forward-looking common costs, as described in paragraph (c)

Subpart (a) of rule 51 505 defines forward-looking economic cost or FLEC. As mentioned above, FLEC is a specific cost standard that has two components. The first is total element long-run incremental cost (TELRIC), the second is a reasonable allocation of common costs. The JSI model calculates both TELRIC and FLEC as discussed below.

**§51.505**

- (b) Total element long-run incremental cost. The total element long-run incremental cost of an element is the forward-looking cost over the long run of the total quantity of the facilities and functions that are directly attributable to, or reasonably identifiable as incremental to, such element, calculated taking as a given the incumbent LEC's provision of other elements
- (1) Efficient network configuration. The total element long-run incremental cost of an element should be measured based on the use of the most efficient telecommunications technology currently available and the lowest cost network configuration, given the existing location of the incumbent LEC's wire centers
  - (2) Forward-looking cost of capital. The forward-looking cost of capital shall be used in calculating the total element long-run incremental cost of an element
  - (3) Depreciation rates. The depreciation rates used in calculating forward-looking economic costs of elements shall be economic depreciation rates.

TELRIC represents the reasonable attribution of incremental costs of an element (in this proceeding transport and termination). There are three required properties of TELRIC: efficient network configuration, forward-looking cost of capital, and economic

depreciation rates. The JSI model uses each of these three required properties. It uses vendor prices for switching, transmission equipment, transmission facility and where available termination equipment and termination facility (also known as traffic-sensitive loop). The vendor costs are compliant with 51 505(b)(1). Where termination equipment and facility costs are not available JSI will use a cost ratio from the FCC's HCPM model.

(See Page 2 of Exhibit DDM-01)

The forward looking cost of capital is also an input for the model. In many instances, for transport and termination purposes, the current authorized rate of return of 11.25 percent is used as representing the forward looking cost of capital. Contrary to the CMRS providers' suggestion this rate is stale having been adopted in 1990, this rate was recently renewed in 2002 by the FCC as appropriate for rate of return interstate purposes. Notwithstanding, the JSI model uses a forward looking cost of capital as an input to its model. The model also uses economic depreciation rates. (In many cases, the support plant rates used by rural carriers are comparable to economic depreciation rates.) The model levelizes this cost across equipment types to calculate a leveled capital cost and return factor. (See Pages 1, 5-8 of Exhibit DDM-01)

**51 505**

- (c) *Reasonable allocation of forward-looking common costs*
  - (1) *Forward-looking common costs. Forward-looking common costs are economic costs efficiently incurred in providing a group of elements or services (which may include all elements or services provided by the incumbent LEC) that cannot be attributed directly to individual elements or services*
  - (2) *Reasonable allocation*
    - (i) *The sum of a reasonable allocation of forward-looking common costs and the total element long-run incremental cost of an element shall not exceed the stand-alone costs associated with the element. In this context, stand-alone costs are the total forward-*

*looking costs, including corporate costs, that would be incurred to produce a given element if that element were provided by an efficient firm that produced nothing but the given element.*

*(ii) The sum of the allocation of forward-looking common costs for all elements and services shall equal the total forward-looking common costs, exclusive of retail costs, attributable to operating the incumbent LEC's total network, so as to provide all the elements and services offered*

The FCC has established specific rules for common costs. The FCC describes “forward-looking common costs as economic costs efficiently incurred in providing a group of elements or services (which may include all elements or services provided by the incumbent LEC) that cannot be attributed directly to individual elements or services.”

Common costs must also satisfy a reasonable allocation requirement which states that shared and common allocations, plus TELRIC for an element must not be greater than the forward-looking stand alone costs of the element. Additionally, the sum of allocable forward-looking common costs must equal total forward-looking common costs, except retail costs, that are attributed to operating the ILEC's total network.

Forward-looking common costs, as defined by the FCC, are developed typically through a carrying charge factor. This process involves the development of an expense to investment ratio. The ratio is developed using total ILEC regulated and most-recent-year expenses as compared to total ILEC investments. This percentage is applied to the forward-looking investment. This carrying charge factor process complies with the FCC rules regarding common cost.

Using a carrying charge factor in this manner is consistent with the FLEC standard. (For a discussion and approval of this method by the FCC, See Joint Application by BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc for Provision of In-Region, InterLATA Services In Georgia and Louisiana, FCC 02-147, MEMORANDUM OPINION AND ORDER, May 15, 2002, ¶¶ 51-64.)

**51 505**

(d) *Factors that may not be considered.* The following factors shall not be considered in a calculation of the forward-looking economic cost of an element.

(1) *Embedded costs.* Embedded costs are the costs that the incumbent LEC incurred in the past and that are recorded in the incumbent LEC's books of accounts,

(2) *Retail costs.* Retail costs include the costs of marketing, billing, collection, and other costs associated with offering retail telecommunications services to subscribers who are not telecommunications carriers, described in §51.609,

(3) *Opportunity costs* Opportunity costs include the revenues that the incumbent LEC would have received for the sale of telecommunications services, in the absence of competition from telecommunications carriers that purchase elements, and

(4) *Revenues to subsidize other services.* Revenues to subsidize other services include revenues associated with elements or telecommunications service offerings other than the element for which a rate is being established

The factors not to be considered include embedded costs, retail costs, opportunity costs, and subsidized revenues. None of these costs are considered in the calculation of FLEC. Contrary to the CMRS providers' claim, a carrying charge factor does not recover embedded costs because the carrying charge is applied to forward-looking investments.

The JSI model complies with 51 505(d).

**51 505**

(e) *Cost study requirements.* An incumbent LEC must prove to the state commission that the rates for each element it offers do not exceed the forward-looking

*economic cost per unit of providing the element, using a cost study that complies with the methodology set forth in this section and §51.511*

*(1) A state commission may set a rate outside the proxy ranges or above the proxy ceilings described in §51.513 only if that commission has given full and fair effect to the economic cost based pricing methodology described in this Section and §51.511 in a state proceeding that meets the requirements of paragraph (e)(2) of this section.*

*(2) Any state proceeding conducted pursuant to this section shall provide notice and an opportunity for comment to affected parties and shall result in the creation of a written factual record that is sufficient for purposes of review. The record of any state proceeding in which a state commission considers a cost study for purposes of establishing rates under this section shall include any such cost study.*

The JSI model allows the TRA to examine the open source model and inputs to satisfy the requirement in 51.505(e).

**§51.511 Forward-looking economic cost per unit.**

*(a) The forward-looking economic cost per unit of an element equals the forward-looking economic cost of the element, as defined in §51.505, divided by a reasonable projection of the sum of the total number of units of the element that the incumbent LEC is likely to provide to requesting telecommunications carriers and the total number of units of the element that the incumbent LEC is likely to use in offering its own services, during a reasonable measuring period.*

The JSI model calculates the forward-looking economic cost of a minute of use. The model develops a reasonable projection of the total number of minutes in the rural carrier network. The JSI model fully complies with 51.511(a).

**51.511**

*(b)(1) With respect to elements that an incumbent LEC offers on a flat-rate basis, the number of units is defined as the discrete number of elements (e.g., local loops or local switch ports) that the incumbent LEC uses or provides.*

*(2) With respect to elements that an incumbent LEC offers on a usage-sensitive basis, the number of units is defined as the unit of measurement of the usage (e.g., minutes of use or call-related database queries) of the element.*

The JSI model does not offer transport and termination on a flat-rate basis. The unit of measurement for transport and termination is equivalent to an access minute. The JSI model complies with 51.511(b).

This summary has explained the methodology used by the JSI model. The JSI model fully complies with FCC regulations. JSI notes that transport and termination is defined by the FCC as:

*§51 701 Scope of transport and termination pricing rules*

- (a) *The provisions of this subpart apply to reciprocal compensation for transport and termination of telecommunications traffic between LECs and other telecommunications carriers.*
- (b) *Telecommunications traffic For purposes of this subpart, telecommunications traffic means:*
  - (1) *Telecommunications traffic exchanged between a LEC and a telecommunications carrier other than a CMRS provider, except for telecommunications traffic that is interstate or intrastate exchange access, information access, or exchange services for such access (see FCC 01-131, paragraphs 34, 36, 39, 42-43), or*
  - (2) *Telecommunications traffic exchanged between a LEC and a CMRS provider that, at the beginning of the call, originates and terminates within the same Major Trading Area, as defined in §24 202(a) of this chapter.*
- (c) *Transport. For purposes of this subpart, transport is the transmission and any necessary tandem switching of telecommunications traffic subject to Section 251(b)(5) of the Act from the interconnection point between the two carriers to the terminating carrier's end office switch that directly serves the called party, or equivalent facility provided by a carrier other than an incumbent LEC.*
- (d) *Termination. For purposes of this subpart, termination is the switching of telecommunications traffic at the terminating carrier's end office switch, or equivalent facility, and delivery of such traffic to the called party's premises.*
- (e) *Reciprocal compensation For purposes of this subpart, a reciprocal compensation arrangement between two carriers is one in which each of the two carriers receives compensation from the other carrier for the transport and termination on each carrier's network facilities of telecommunications traffic that originates on the network facilities of the other carrier*

For purposes of this requirement, transport is the transmission and any necessary tandem switching of telecommunications traffic subject to Section 251(b)(5) of the Act

from the interconnection point between the two carriers to the terminating carrier's end office switch that directly serves the called party, or equivalent facility provided by a carrier other than an incumbent LEC. The costs incurred by an RLEC for delivery of traffic to the RLEC network through a third-party are includable as transport. To the extent the RLEC is charged by the transit provider for this service, it will pass-along these expenses to the CMRS provider. Further, depending upon where the CMRS provider chooses to interconnect with the RLEC, RLEC costs of delivering traffic to a point outside the RLEC network are the responsibility of the CMRS provider. There is no interconnection responsibility of the RLEC to interconnect outside its network. Transit costs are clearly part of transport when the CMRS provider does not directly connect with the RLECs. This view is consistent with FCC regulations and RLEC interconnection obligations.

Termination is the switching of telecommunications traffic at the terminating carrier's end office switch, or equivalent facility, and delivery of such traffic to the called party's premises. TELRIC permits the inclusion of traffic-sensitive costs associated with delivery of traffic to the called party's premise. An example of "traffic sensitive termination" is the delivery of traffic to the line card serving the customer. The loop is the direct connection from the RLEC network to the customer premise. JSI and the CMRS providers agree that non-traffic sensitive costs are not to be included in a termination rate. Some efficient network configurations have reduced the loop distance to customers using DLC devices. The facilities connecting the most efficient DLC device locations to the central office are shared facilities that are traffic engineered and traffic

sensitive. The costs of these facilities are allowable costs under TELRIC. The loop from the DLC line card to the customer premise remains non-traffic sensitive and is not included under TELRIC. This method is fully consistent with the definition of termination. This definition allows for the inclusion of traffic sensitive costs in the delivery to the called party's premises.

## CHR TELRIC MODEL

A	B	C	D	E	F	G	H
1	Company						
2	Date						
3		Allocator	Source	Total	Switching	Tandem Switching	Transport
4							
5							
6	<u>INVESTMENT</u>						
7							
8	<u>Central Office Equipment</u>						
9	<u>Switching</u>						
10	COE Cat 2 Tandem Switching	Workpaper		0		0	
11	COE Cat 3 Local Switching	Workpaper		0			
12	Traffic Sensitive	100%	Workpaper		0		
13	Non Traffic Sensitive	0%					
14	Total Switching			0	0	0	0
15							
16	<u>Circuit Equipment</u>						
17	COE Cat 4 12 Exchange Trunk CCT	Workpaper		0		0	
18	COE Cat 4 23 All Other IX CCT	Workpaper		0		0	
19	COE Cat 4 3 Host/Remote Msg CCT	Workpaper		0		0	
20	Total Circuit	SUM (17 19)		0	0	0	0
21							
22	<b>TOTAL Central Office Equipment</b>	14+20		0	0	0	0
23							
24	<u>Cable &amp; Wire Facilities</u>						
25	C & WF Cat 2 Exchange Trunk	Workpaper		0		0	
26	C & WF Cat 3 Interexchange	Workpaper		0		0	
27	C & WF Cat 4 Host/Remote	Workpaper		0		0	
28	<b>TOTAL Cable &amp; Wire Facilities</b>	SUM (25 27)		0	0	0	0
29							
30	<b>Total COE, CWF</b>	22+28		0	0	0	0
31							
32	<u>Common Plant</u>						
33	Land						
34	Central Office Equipment	0 00% x Line 22		0	0	0	
35	All Other	0 00% x Line 30		0	0	0	
36	Buildings						
37	Central Office Equipment	0 00% x Line 22		0	0	0	
38	All Other	0 00% x Line 30		0	0	0	
39	Vehicles	0 00% x Line 30		0	0	0	
40	Work Equipment	0 00% x Line 28		0	0	0	
41	Furniture	0 00% x Line 30		0	0	0	
42	Office Equipment	0 00% x Line 30		0	0	0	
43	Computers (Less Billing)	0 00% x Line 30		0	0	0	
44	<b>TOTAL Support Facilities</b>	SUM (33 43)		-	-	-	-
45							
46	<b>TOTAL Telephone Plant In Service</b>			0	0	0	
47							
48	Material & Supplies	0 00% x Line 30		0	0	0	
49	Cash Working Capital - Interstate	0 00% x Line 30		0	0	0	
50							
51	<u>Accumulated Depreciation</u>						
52	COE Switching	0 00% x Line 14		0	0	0	
53	COE Circuit	0 00% x Line 20		0	0	0	
54	C&WF	0 00% x Line 28		0	0	0	
55	Buildings - Central Office Equipment	0 00% x Line 37		0	0	0	
56	Buildings - All Other	0 00% x Line 38		0	0	0	
57	Vehicles	0 00% x Line 39		0	0	0	
58	Work Equipment	0 00% x Line 40		0	0	0	
59	Furniture	0 00% x Line 41		0	0	0	
60	Office Equipment	0 00% x Line 42		0	0	0	
61	Computers (Less Billing)	0 00% x Line 43		0	0	0	
62	<b>TOTAL Depreciation Reserve</b>	SUM (52 61)		0	0	0	
63							
64	Other Reserves	0 00% x Line 46		0	0	0	
65							
66	<b>Net Telecommunications Plant</b>	46+48+49-62-64		0	0	0	
67							
68							



## CHR TELRIC MODEL

	A	B	C	D	E	F	G	H
1	Company							
2	Date							
3						Tandem		
4		Allocator	Source	Total	Switching	Switching	Transport	
5								
111	<b>RATE DEVELOPMENT</b>							
112								
113	Net Investment	66		0	0	0		
114	Rate of Return	Workpaper		0 0000%	0 0000%	0 0000%		
115	Return	113 X 114		0	0	0		
116	Less Net Adds/Deducts for FIT	105		0	0	0		
117	Less ITC	Workpaper		0	0	0		
118	Total FIT Base	115-116-117		0	0	0		
119	FIT Gross-up Factor	Workpaper		0 00%	0 00%	0 00%		
120	Gross FIT	118 x 119		0	0	0		
121	Less ITC	117		0	0	0		
122	Net FIT	120 - 121		0	0	0		
123	Total SIT Base	118 + 120		0	0	0		
124	SIT Rate	Workpaper		0 0000%	0 0000%	0 0000%		
125	Net SIT	123 x 124		0	0	0		
126	Return + FIT + SIT	115 + 122 + 125		0	0	0		
127	Total Expenses, Taxes	103		0	0	0		
128	Total Revenue Requirement	126 + 127		0	0	0		
129								
130								
131	Annual Demand	Workpaper		-	-	-		
132	Cost per MOU	128 / 131	\$0 0000	\$0 0000	\$0 0000	\$0 0000		

## JSI TELRIC MODEL

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Page 1 of 10

Forward-Looking Economic Cost for Transport and Termination Function

A	B	C	D	E	F	G
Section	Sub	Description	Detail	Unit	Source	Amount
1		Forward-Looking Investment				
A		Switching	Forward-Looking, \$US	FL Investment WS	\$	-
B		Transmission Equipment	Forward-Looking, \$US	FL Investment WS	\$	-
C		Transmission Facility	Forward-Looking, \$US	FL Investment WS	\$	-
D		Traffic-Sensitive Loop	Forward-Looking, \$US	FL Investment WS	#DIV/0!	
E		Support Plant	Forward-Looking, \$US	sum(1A-1D)* %	#DIV/0!	
2		Levelized Capital Cost and Return Factor				
A		Switching	Cost per \$ of Investment	Level CF WS	#DIV/0!	
B		Transmission Equipment	Cost per \$ of Investment	Level CF WS	#NUM!	
C		Transmission Facility	Cost per \$ of Investment	Level CF WS	#NUM!	
D		Traffic-Sensitive Loop	Cost per \$ of Investment	Level CF WS	#NUM!	
E		Support Plant	Cost per \$ of Investment	Level CF WS	#NUM!	
3		Forward-Looking Direct Cost Factor				
A		Switching	Cost per \$ of Investment	Direct Shared Common CF WS	#DIV/0!	
B		Transmission Equipment	Cost per \$ of Investment	Direct Shared Common CF WS	#DIV/0!	
C		Transmission Facility	Cost per \$ of Investment	Direct Shared Common CF WS	#DIV/0!	
D		Traffic-Sensitive Loop	Cost per \$ of Investment	Direct Shared Common CF WS	#DIV/0!	
4		Forward-Looking Joint Cost or Shared Cost Factor				
A		Switching	Cost per \$ of Investment	Direct Shared Common CF WS	#DIV/0!	
B		Transmission Equipment	Cost per \$ of Investment	Direct Shared Common CF WS	#DIV/0!	
C		Transmission Facility	Cost per \$ of Investment	Direct Shared Common CF WS	#DIV/0!	
D		Traffic-Sensitive Loop	Cost per \$ of Investment	Direct Shared Common CF WS	#DIV/0!	
5		Forward-Looking Common Cost Fixed Allocator	Cost per \$ of Investment	Direct Shared Common CF WS	#DIV/0!	
6		Forward-Looking Annual Cost				
A		Switching	Total \$US, Annual	1A*(2A+3A+4A+5)	#DIV/0!	
B		Transmission Equipment	Total \$US, Annual	1B*(2B+3B+4B+5)	#NUM!	
C		Transmission Facility	Total \$US, Annual	1C*(2C+3C+4C+5)	#NUM!	
D		Traffic-Sensitive Loop	Total \$US, Annual	1D*(2D+3D+4D+5)	#DIV/0!	
E		Support Plant	Total \$US, Annual	1E*(2E+5)	#DIV/0!	
F		Transport	Total \$US, Annual	(SUM(6B 6C)/SUM(6A 6D))*6E	#NUM!	
G		Termination	Total \$US, Annual	6E-6F	#DIV/0!	
7		Forward-Looking Demand				
A		Total Switching MOU	Total MOU, Annual	FL DEMAND WS	-	
B		Total Transport MOU	Total MOU, Annual	FL DEMAND WS	-	
8		Forward-Looking Economic Cost				
A		Transport per MOU	FLEC per MOU	SUM(6B,6C,6F)/7B	#NUM!	
B		Termination per MOU	FLEC per MOU	SUM(6A,6D,6G)/7A	#DIV/0!	
C		TOTAL Rate w/o tandem	FLEC per MOU	7A+7B	#NUM!	
D		Terminating Tandem Costs	\$/MOU	Input from Tandem		
E		TOTAL Rate w/ tandem	\$/MOU	7C+7D	#NUM!	
F		Delivery to POI outside network	\$/MOU	TBD		

0  
Forward-Looking Investment

A	B	C	D	E	F	G
Section	Sub	Description	Detail	Unit	Source	Amount
1	Switching					
A		Forward-Looking Vendor Switch Cost		Vendor Quote	\$	-
B		Switching Fill Factor Adjustment		Input		-
C		Forward-Looking Switch Cost		IA*IB	\$	-
2	Transmission Equipment					
A		Forward-Looking Vendor Transmission Cost		Vendor Quote	\$	-
B		Facility Sharing Transmission Equipment Percentage		Input		0 00%
C		Forward-Looking Transmission Cost		2A*2B	\$	-
3	Transmission Facility					
A		Fiber Cost per Foot	\$US	Vendor Quote	\$	-
B		Host to Meet-Point Distance(s)	Statute Route Miles	Company Data & Vendor Quote		-
C		Total Fiber Ring Miles	Statute Route Miles	Vendor Quote		-
D		Facility Sharing Transmission Facility Percentage		Input		0 00%
E		Total Transmission Facility	\$US	3A*5280*SUM(3B 3C)*3D	\$	-
4	Traffic-Sensitive Loop -- Transmission from Swtich to In-Field Line Cards (default method if company specific infomration not avail )					
A		HCPM Gross Loop Plant	Total \$US	HCPM	\$	-
B		HCPM DLC Transmission	Total \$US	HCPM	\$	-
C		HCPM DLC Percentage	Percentage	4B/4A	#DIV/0!	
D		CWF	Total \$US	USOA 2410	\$	-
E		Estimated Gross Loop Plant		4D - 3E	\$	-
F		Forward Looking DLC Transmission		4C*4E		#DIV/0!
G		Facility Sharng Traffic Sensitive Loop Percentage		Input		
H		TOTAL Traffic-Sensitive Loop		4F*4G		#DIV/0!
5	Support Plant					
A		TPIS	Total \$US	USOA 2001	\$	-
B		Support Plant	Total \$US	USOA 2110 2120	\$	-
C		Support Plant Percentage	Percentage	SB/SA		#DIV/0!

**0**

## Forward-Looking Direct, Shared and Common Cost Factors

A	B	C	D	E	F	G
Section	Sub	Description	Detail	Unit	Source	Amount
1		Transport and Termination Costs				
	A	COE Maintenance Expense	\$US		USOA 6210 6220 \$	-
	B	Network Support	\$US		USOA 6110 \$	-
	C	General Support	\$US		USOA 6120 \$	-
	D	Network Operations	\$US		USOA 6530 \$	-
	E	Materials and Supplies	\$US		USOA 1220 \$	-
	F	CWF	\$US		USOA 6410 \$	-
	G	CO Transmission Expense	\$US		USOA 6230 \$	-
2		Transport and Termination Investments				
	A	COE Switching	\$US		USOA 2210 \$	-
	B	COE Operator	\$US		USOA 2220 \$	-
	C	COE Transmission	\$US		USOA 2230 - 2D \$	-
	D	Transport	\$US		USOA 2230 cat 4 12 4 23 4 3 \$	-
	E	CWF	\$US		USOA 2410 \$	-
	F	TPIS	\$US		USOA 2001 \$	-
3		Direct Transport and Termination Factors				
	A	Switching	Annual Charge Factor		1A/SUM(2A 2C)	#DIV/0!
	B	Transmission Equipment	Annual Charge Factor		1B/2C	#DIV/0!
	C	Transmission Facility	Annual Charge Factor		1C/2E	#DIV/0!
	D	Traffic-Sensitive Loop	Annual Charge Factor		1D/2E	#DIV/0!
4		Shared Transport and Termination Factors				
	A	Network Support	Annual Charge Factor		1B'2F	#DIV/0!
	B	General Support	Annual Charge Factor		1C/2F	#DIV/0!
	C	Network Operations	Annual Charge Factor		1D/2F	#DIV/0!
	D	Materials and Supplies	Annual Charge Factor		1E/2F	#DIV/0!
5		Common Costs				
	A	Corp Operations	\$US		USOA 6710 6720 \$	-
	B	Operating Taxes	\$US		USOA 7200 \$	-
	C	Uncollectibles	\$US		USOA 5300 \$	-
6		Common Cost Factor		Annual Charge Factor	SUM(5A 5C)/2F	#DIV/0!

0

## Forward-Looking Demand

(Demand configuration varies because of network design Changes to this page will occur for individual studies)

A      B      C      D      E      F      G

Section	Sub	Description	Detail	Unit	Source	Amount
1		DEM				
A		Switching			Input	-
B		Tandem Transport			Input	-
2		DEM to Access Equivalent MOU Conversion				
A		DEM Access Factor			Input	-
B		Access Equivalent Switching			$IA*2A$	-
C		Access Equivalent Tandem Transport			$IB*2A$	-
3		Access Equivalent MOU FL Demand				
A		Growth Rate			Input	0 0%
B		Access Equivalent Switching			$2B*3A$	-
C		Access Equivalent Tandem Transport			$2C*3A$	-
4		Local Inter-Office Transmission Percentage (used for EAS traffic transport)				
A		Percentage Local MOU to Total Switching MOU				0%
B		Percentage EAS MOU to Local MOU				0%
C		Local MOU Transmission				-
5		Total Study MOUs				
A		TOTAL Switching			$3B$	-
B		TOTAL Transport			$3C + 4C$	-

0

	Switching Cost Factor				Annual per \$ factor		#DIV/0!			#DIV/0!		#DIV/0!	
	Value	Period	Value	Period	Debt	Equity	Annual	Annual	PV of	Adjust for	PV Annual	Levelized	
K	Year	Begin	Depreciation	End	Interest	Dividend	Charge	Difference	Annual Charge	Charge Difference	Charge Difference	Annualized Charge	
	A	B	C	D	E	F	G	H	I	J	K	L	
					B-C		C+E+F		PV(H)	iterate	ann chrg+J		
L	1	\$1,000 00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
M	2	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
O	3	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
P	4	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
Q	5	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
R	6	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
S	7	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
T	8	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
U	9	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
V	10	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
W	11	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
X	12	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
Y	13	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
Z	14	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
AA	15	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
AB	16	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	\$ -	#DIV/0!		
AC		Salvage Value			#DIV/0!								

0

## 2 Transmission Equipment Cost Factor

Annual per \$ factor #NUM'

A	Initial \$ Cost	\$ 1,000 00
B	Service Life (Years)	-
C	Debt Ratio	0 00%
D	Cost of Debt	0 00%
E	Cost of Equity	0 00%
F	Cost of Invested Capital	0 00%
G	Salvage Value	-
H	Amount Debt Financed	\$ -
I	Amount Equity Financed	\$ 1,000 00

#NUM! 0.00

Adjust for

Adjust for  
PV Annual

0

3      Transmission Facility Cost Factor                          Annual per \$ factor #NUM!

4      Traffic Sensitive Loop Cost Factor                          Annual per \$ factor #NUM!

A	Initial \$ Cost	\$ 1,000 00
B	Service Life (Years)	-
C	Debt Ratio	0 00%
D	Cost of Debt	0 00%
E	Cost of Equity	0 00%
F	Cost of Invested Capital	0 00%
G	Salvage Value	-
H	Amount Debt Financed	\$ -
I	Amount Equity Financed	\$ 1,000 00
J		

#NUM! \$1,000 00

PV of \$1,000 00

Adjust for

K	Year	Value Period		Depreciation C	Value Period End D	Debt Interest E	Equity Dividend F	Annual Charge G	Annual Charge H	Annual Charge Difference I	PV of Annual Charge J	Annualized Charge K
		Begin A	End B									
B-C												
L	1	\$1,000 00	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
M	2	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
O	3	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
P	4	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
Q	5	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
R	6	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
S	7	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
T	8	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
U	9	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
V	10	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
W	11	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
X	12	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
Y	13	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
Z	14	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AA	15	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AB	16	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AC	17	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AD	18	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AE	19	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AF	20	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AG	21	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AH	22	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AI	23	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AJ	24	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AK	25	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	\$ -	#NUM!
AL	Salvage Value		\$ -									

0

## 5 Support Plant

Annual per \$ factor #NUM!

A	Initial \$ Cost	\$ 1,000 00
B	Service Life (Years)	-
C	Debt Ratio	0 00%
D	Cost of Debt	0 00%
E	Cost of Equity	0 00%
F	Cost of Invested Capital	0 00%
G	Salvage Value	-
H	Amount Debt Financed	\$ -
I	Amount Equity Financed	\$ 1,000 00

#NUM! 00

### Adjust for

**0**  
Input Page

Item	Unit	Source	Amount
1 Name of LEC			
2 Forward-Looking Switching Cost	\$US 2002	Vendor	
3 Switching Fill Factor	Percentage	Analysis	
4 Forward-Looking Transmission Cost	\$US 2002	Vendor	
5 Facility Sharing Transmission Percentage		Analysis	
6 Fiber Cost per Foot	\$US 2002	Vendor	
7 Distance from Host(s) to Tandem(s)	Statute Route Miles	LEC	
8 Distance from Host(s) to Tariff 4 Remote(s)	Statute Route Miles	Vendor	
9 Facility Sharing Transmission Percentage	Percentage	Analysis	
10 HCPM Gross Loop Plant	Total \$US	HCPM	
11 HCPM DLC Transmission	Total \$US	HCPM	
12 CWF	Total \$US	USOA 2410	
13 TPIS	Total \$US	USOA 2001	
14 Support Plant 2110	Total \$US	USOA 2110	
15 Support Plant 2120	Total \$US	USOA 2120	
16 COE Maintenance Expense 6210	Total \$US	USOA 6210	
17 COE Maintenance Expense 6220	Total \$US	USOA 6220	
18 Network Support Expense	Total \$US	USOA 6110	
19 General Support Expense	Total \$US	USOA 6120	
20 Network Operations Expense	Total \$US	USOA 6530	
21 Materials and Supplies Expense	Total \$US	USOA 1220	
22 CWF Expense	Total \$US	USOA 6410	
23 CO Transmission Expense	Total \$US	USOA 6230	
24 COE Switching Investment	Total \$US	USOA 2210	
25 COE Operator Investment	Total \$US	USOA 2220	
26 COE Transmission Investment	Total \$US	USOA 2230	
27 Transport Investment 2230, cat 4 12	Total \$US	4.12	
28 Transport Investment 2230, cat 4 23	Total \$US	4.23	
29 Transport Investment 2230, cat 4 3	Total \$US	USOA 2230, cat 4.3	
30 CWF Investment	Total \$US	USOA 2410	
31 Corp Operations Expense 6710	Total \$US	USOA 6710	
32 Corp Operations Expense 6720	Total \$US	USOA 6720	
33 Operating Taxes	Total \$US	USOA 7200	
34 Uncollectibles	Total \$US	USOA 5300	
35 Switching (Includes ISP and CMRS minutes)	MOU	Total DEM	
36 Tandem Transport	MOU	Toll DEM	
37 MOU Percentage local	Percentage	Analysis	
38 DEM:Access Factor	Percentage	Industry Value	
39 Total DEM Growth Rate	Percentage	Analysis	
40 Remote Local MOUs transmitted to host	Percentage	Analysis	
41 LEC Debt Ratio	Percentage	LEC Data	
42 LEC Cost of Debt	Percentage	LEC Data	
43 Digital Switching - Economic Life	Years		
44 Operator Systems - Economic Life	Years		
45 Digital Circuit Equipment - Economic Life	Years		
46 Buried - Non-Metallic - Economic Life	Years		
47 Support Plant - Weighted Average Depreciation Life	Years	LEC Data	

	<b>Item</b>	<b>Unit</b>	<b>Source</b>	<b>Amount</b>
48	Digital Switching - Salvage	Percentage		
49	Operator Systems - Salvage	Percentage		
50	Digital Circuit Equipment - Salvage	Percentage		
51	Buried - Non-Metallic - Salvage	Percentage		
52	Support Plant - Salvage	Percentage		
53	Access Loops by Tariff 4 Wire Center	Access Loops	LEC Data	
54	Total TR-303 provisioned loops by Tariff 4 Wire Cent	TR-303 Loops	LEC Data	
55	Total Loops by Tariff 4 Wire Center	Total Loops	LEC Data	
56	Total TR-303 used ports by Tariff 4 Wire Center	Total TR-303 Ports	LEC Data	
57	Total equipped analog ports by Tariff 4 Wire Center	Equipped ports	LEC Data	
58	Total equipped TR-303 ports by Tariff 4 Wire Center	Equipped ports	LEC Data	
59	Total access loops at hosts (analog and TR-303)	Access Loops	LEC Data	

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#### **Parameters Used In Model**

Switch Engineering	0 000%	( 1 )
Central Office Power Factor	0 000%	( 2 )
Transport Engineering	0 000%	( 3 )
Transport Power Factor	0 000%	( 4 )
Switch Port Fill Factor	0 000%	( 5 )
Transport Termination Fill Factor	0 000%	( 6 )
Common Host Switch Investment	\$ -	( 7 )
Variable (Per Line) Host Switch Investment	\$ -	( 8 )
Common Remote Switch Investment	\$ -	( 9 )
Variable (Per Line) Remote Switch Investment	\$ -	( 10 )
Main Distribution Frame (Per Line)	\$ -	( 11 )
Business Days Per Month	0	( 12 )
Percent of Daily MOU Assigned to Busy Hour	0 000%	( 13 )
Maximum Trunk Occupancy in CCS	0	( 14 )
Trunks per DS-1	0	( 15 )
DS-1s per DS-3	0	( 16 )
Transmission Multiplexing (DS-3) Per Card (1 DS-3)	\$ -	( 17 )
Transmission Multiplexing (DS-1) Per Card (7 DS-1s)	\$ -	( 18 )
Digital Cross Connect (DS-1) Per 84 DS-1s	\$ -	( 19 )
Transmission Terminal OC-3	\$ -	( 20 )
Transmission Terminal OC-12	\$ -	( 21 )
Transmission Terminal OC-48	\$ -	( 22 )
Transmission Terminal OC-96	\$ -	( 23 )
Average Fiber Investment per Foot	\$ -	( 24 )

## OSP Probability and Costs

Percentage of OSP - 12 Fiber Aenal	0 000%	\$	-	\$
Percentage of OSP - 12 Fiber Buned	0 000%	\$	-	\$
Percentage of OSP - 12 Fiber Underground	0 000%	\$	-	\$
Percentage of OSP - 24 Fiber Aenal	0 000%	\$	-	\$
Percentage of OSP - 24 Fiber Buned	0 000%	\$	-	\$
Percentage of OSP - 24 Fiber Underground	0 000%	\$	-	\$
Percentage of OSP - 36 Fiber Aenal	0 000%	\$	-	\$
Percentage of OSP - 36 Fiber Buned	0 000%	\$	-	\$
Percentage of OSP - 36 Fiber Underground	0 000%	\$	-	\$
Percentage of OSP - 48 Fiber Aenal	0 000%	\$	-	\$
Percentage of OSP - 48 Fiber Buned	0 000%	\$	-	\$
Percentage of OSP - 48 Fiber Underground	0 000%	\$	-	\$
Percentage of OSP - 72 Fiber Aenal	0 000%	\$	-	\$
Percentage of OSP - 72 Fiber Buned	0 000%	\$	-	\$
Percentage of OSP - 72 Fiber Underground	0 000%	\$	-	\$
Percentage of OSP - 96Fiber Aenal	0 000%	\$	-	\$
Percentage of OSP - 96 Fiber Buned	0 000%	\$	-	\$
Percentage of OSP - 96 Fiber Underground	0 000%	\$	-	\$

## ANNUAL CHARGE FACTOR DEVELOPMENT

		Asset Description		Annual Charge Factor Parameters	
		Digital Electronic Switching	Circuit & Termination Equipment	Outside Plant Cable & Equip	Digital Equipment Life
<b>1 Amortization Service Life</b>		0.00%	0.00%	0.00%	0.00%
Cost of Money		#DIV/0!	#DIV/0!	#DIV/0!	Outside Plant Life
ACF - Without Income Tax					Digital Switching Salvage Value
<b>2 Income Tax Gross-Up</b>		#DIV/0!	#DIV/0!	#DIV/0!	Circuit Equipment Salvage Value
Income Tax		#DIV/0!	#DIV/0!	#DIV/0!	Outside Plant Salvage Value
ACF With Income Taxes					
<b>3 Adjustment for Future Salvage Value</b>					
Future Salvage Value		0.00%	0.00%	0.00%	
Present Value of Salvage Value		#DIV/0!	#DIV/0!	#DIV/0!	
Future Salvage Adjustment		#DIV/0!	#DIV/0!	#DIV/0!	Effective Income Tax Rate
<b>ACF with Income Taxes and Future Salvage Adjustment</b>					
<b>4 Factors</b>					
A DIRECT TELRIC COMPONENTS Expenses		Y	Factor	#DIV/0!	#DIV/0!
Plant Specific					#DIV/0!
<b>DIRECT PORTION OF ANNUAL CHARGE FACTOR</b>				#DIV/0!	#DIV/0!
Annual Cost Factor =>				#DIV/0!	#DIV/0!
<b>B SHARED TELRIC COMPONENTS</b>				#DIV/0!	#DIV/0!
Power		Y	#DIV/0!	#DIV/0!	#DIV/0!
Network Administration Expenses		Y	#DIV/0!	#DIV/0!	#DIV/0!
Testing Expenses		Y	#DIV/0!	#DIV/0!	#DIV/0!
Engineering Expenses		Y	#DIV/0!	#DIV/0!	#DIV/0!
Shared by direct and shared support assets					
Property Held For Future Telecom Use Expenses				#DIV/0!	#DIV/0!
Provisioning Expenses				#DIV/0!	#DIV/0!
Plant Operations Administration Expenses				#DIV/0!	#DIV/0!
Other Work Equipment				#DIV/0!	#DIV/0!
Land & Buildings (% Shared By Direct)				#DIV/0!	#DIV/0!
<b>Annual Cost Factors</b>				#DIV/0!	#DIV/0!
Motor Vehicle				#DIV/0!	#DIV/0!
Aircraft				#DIV/0!	#DIV/0!
Special Purpose Vehicle				#DIV/0!	#DIV/0!
Garage Work Equipment				#DIV/0!	#DIV/0!
Other Work Equipment				#DIV/0!	#DIV/0!
Land & Buildings (% Shared By Direct)				#DIV/0!	#DIV/0!
<b>SHARED PORTION OF ANNUAL CHARGE FACTOR</b>				#DIV/0!	#DIV/0!
Annual Cost Factor =>				#DIV/0!	#DIV/0!
<b>C COMMON Expenses</b>				#DIV/0!	#DIV/0!
Customer Operations		Y	#DIV/0!	#DIV/0!	#DIV/0!
Corporate Operations		Y	#DIV/0!	#DIV/0!	#DIV/0!
Other Taxes		Y	#DIV/0!	#DIV/0!	#DIV/0!
Motor Vehicle				#DIV/0!	#DIV/0!
Aircraft				#DIV/0!	#DIV/0!
Special Purpose Vehicle				#DIV/0!	#DIV/0!
Other Work Equipment				#DIV/0!	#DIV/0!
<b>Annual Cost Factors</b>				#DIV/0!	#DIV/0!
Land & Buildings (% Common)				#DIV/0!	#DIV/0!
Furniture & Artwork				#DIV/0!	#DIV/0!
Office Equipment				#DIV/0!	#DIV/0!
General Purpose Computers				#DIV/0!	#DIV/0!
<b>COMMON PORTION OF ANNUAL CHARGE FACTOR</b>				#DIV/0!	#DIV/0!
Annual Cost Factor =>				#DIV/0!	#DIV/0!

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A	B	C	D	E	F	G	H	I	J	K	L	M
<b>XYZ Telecommunications Company</b>												
2												
3												
4	Total Transmission Terminal Investment	\$										
5	Total Digital Cross Connect Investment	\$										
6	Total Interoffice Facility Investment	\$										
7	Total Transmission Investment	\$										
8	Annual Cost Basis of Terminal		#DIV/0!									
9	Annual Cost Basis of Digital Cross Connect		#DIV/0!									
10	Annual Cost Basis of Facility		#DIV/0!									
11	Allocation of Direct Transport Expenses		#DIV/0!									
12	Allocation of Shared Expenses		#DIV/0!									
13	Allocation of Common Expenses		#DIV/0!									
14	<b>Total Annual Transmission Costs</b>		<b>#DIV/0!</b>									
15												
16	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
17	Exchange	Host / Remote	Access Lines	Allocated Inter-Office Minutes of Use	Busy Hour MOU Trunk Demand	Required DS-1 Appearances at Each End Office	Required DS-3s to Support MOU Demand	Transmission Terminal Investment	Transmission Multiplexing Equipment Investment	Required Transmission Terminal Investment	Required Digital Cross Connection Investment	
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29	XYZ Telecommunications Company	0	0.00	0.00						\$ -	\$ -	(12)
30												

TDS Telecom Wireless Interconnection Rate Development Model

# XYZ Telecommunications Company

## Switching Module Results

Allocated Costs to Ports (Access Lines)  
Allocated Costs to Switching (MOU Demand)

Total Access Lines

Total MOU

Annual Per Port Cost

Monthly

Cost Per MOU

## Transmission Module Results

Total Costs (MOU Demand)

Total Interoffice MOU

Cost Per MOU

## Study Preparation, Filing, Consultant and Attorney Fees

Total Costs \$ #VALUE!

Cost Per MOU

## Total Wireless Interconnection Rate

PBA TELRIC MODEL

Input No 1		GENERAL		Name of Company		ABC Telephone Co			
1		Federal Tax Rate		0.0%		Over Given			
2		State Tax Rate		0.0%		Given			
3		Effective Rate		=H\$1(H\$1)		Calc			
4		Gross Up for Income Tax		=H\$1(H\$1)		Calc			
5		Year of Historical Data		2004		Given			
6		Reserved		0					
7		Reserved		0					
Worksheet		Line 1		Access Lines		Input No 22703		Input 3	
A10+1		Line 2		Acct 2901 TRPS		0			
A11+1		Line 3		Acct 1220 Mat & Suppl		0			
A12+1		Line 4		Acct 2110 Support Assn		0			
A13+1		Line 5		Acct 2210 COE Svcs C		=H\$2(W\$3%10)		Split based on MOU %	
A20+1		Line 6		Acct 2210 COE Svcs C		=H\$2(W\$2)		=H\$20	
A21+1		Line 7		Acct 2210 COE Svcs		0			
A22+1		Line 8		Acct 2220 COE Transm		0			
A23+1		Line 9		Acct 2230 Cat 12 4 2		0			
A24+1		Line 10		Acct 2410 C&W		0			
A25+1		Line 11		Acct 2410 C&W Cat 2		0			
A27+1		Line 12		Acct 6110 Netw Sup		0			
A28+1		Line 13		Acct 6120 Netw Sup T		0			
A29+1		Line 14		Acct 6230 Netw Sup C		0			
A30+1		Line 15		Acct 6410 C&W Exp		0			
A31+1		Line 16		Acct 6530 Netw Op Exp		0			
A32+1		Line 17		Acct 6510 Oth Prod Exp		0			
A33+1		Line 18		Depr Exp COE		0			
A34+1		Line 19		Depr Exp CWF		0			
A35+1		Line 20		Depr Amortiz & Supp		0			
A36+1		Line 21		Acct 6110 4720 Corp		0			
A37+1		Line 22		Acct 7200 Other Taxe		0			
A38+1		Line 23		CABS Billing Expenses		0			
A39+1		Line 24		MSO Processor Expens		0			
A40+1		Line 25		Marketing Expenses		0			
Worksheet		Line 4d		Materials & Supplies De		Input			
A41+1		Reserved		0		0			
Worksheet		I Line 2		% Minutes Switched at		0			
A45+1		Interstate		Interstate		0			
A46+1		State Interstate		State Interstate		0			
A47+1		State Intrastate		State Intrastate		0			
A48+1		Local Intrastate		Local Intrastate		0			
A49+1		Local Inter-office		Local Inter-office		0			
A50+1		II Line 5		Avg interoffice miles per		0			
A51+1		Avg LOCAL miles per m		0		0			
A52+1		DEM Minutes		0		0			
A53+1		III Line 2		Interstate		0			
A54+1		State Interstate		State Interstate		0			
A55+1		State Intrastate		State Intrastate		0			
A56+1		Total Local		Total Local		0			
A57+1		% Local Inter-office		% Local Inter-office		0			
A58+1		% Local Intrastate		% Local Intrastate		0			
A59+1		IV Line 2		Originating MOU ratio		0			
A60+1		Interstate		Interstate		0			
A61+1		State Interstate		State Interstate		0			
A62+1		State Intrastate		State Intrastate		0			
A63+1		Local Intrastate		Local Intrastate		0			
A64+1		Local Inter-office		Local Inter-office		0			
A65+1		V Line 4		Interstate Access Minus		0			
A66+1		VI Line 12		Annualized MOU growth		0			
A67+1		VII Line 1		Number of Transactn Re		0			
A68+1		OC-0 Rings		OC-0 Rings		0			
A69+1		OC-4 Rings		OC-4 Rings		0			
A70+1		OC-12 Rings		OC-12 Rings		0			
A71+1		OC-48 Rings		OC-48 Rings		0			
A72+1		OC-12 Rings		OC-12 Rings		0			
A73+1		OC-3 Rings		OC-3 Rings		0			
A74+1		III Line 3b		Number of DS1s provis		0			
A75+1		III Line 5a		Total Circuits (Non VG E		0			
A76+1		III Line 5b		Total Message Circuits (		0			
Worksheet		OC 3		Avg OC3 EF&S \$ per Unit		0			
A83+1		OC 12		Avg OC12 EF&S \$ per Unit		0			
A87+1		OC 48		Avg OC48 EF&S \$ per Unit		0			
A88+1		OC-96		Avg OC96 EF&S \$ per Unit		0			
A89+1		OC-192		Avg OC192 EF&S \$ per Unit		0			
A90+1		OC-384		Avg OC384 EF&S \$ per Unit		0			
A91+1		OC-768		Avg OC768 EF&S \$ per Unit		0			
A92+1		OC-1536		Avg OC1536 EF&S \$ per Unit		0			
A93+1		OC-3072		Avg OC3072 EF&S \$ per Unit		0			
A94+1		OC-6144		Avg OC6144 EF&S \$ per Unit		0			
A95+1		OC-12288		Avg OC12288 EF&S \$ per Unit		0			
A96+1		OC-24576		Avg OC24576 EF&S \$ per Unit		0			
A97+1		OC-49152		Avg OC49152 EF&S \$ per Unit		0			
A98+1		OC-98304		Avg OC98304 EF&S \$ per Unit		0			
A99+1		OC-196608		Avg OC196608 EF&S \$ per Unit		0			
A100+1		OC-393216		Avg OC393216 EF&S \$ per Unit		0			
A101+1		OC-786432		Avg OC786432 EF&S \$ per Unit		0			
A102+1		OC-1572864		Avg OC1572864 EF&S \$ per Unit		0			
A103+1		OC-3145728		Avg OC3145728 EF&S \$ per Unit		0			
A104+1		OC-6291456		Avg OC6291456 EF&S \$ per Unit		0			
A105+1		OC-12582912		Avg OC12582912 EF&S \$ per Unit		0			
A106+1		OC-25165824		Avg OC25165824 EF&S \$ per Unit		0			
A107+1		OC-50331648		Avg OC50331648 EF&S \$ per Unit		0			
A108+1		OC-100663296		Avg OC100663296 EF&S \$ per Unit		0			
A109+1		OC-201326592		Avg OC201326592 EF&S \$ per Unit		0			
A110+1		OC-402653184		Avg OC402653184 EF&S \$ per Unit		0			
A111+1		OC-805306368		Avg OC805306368 EF&S \$ per Unit		0			
A112+1		OC-1610612736		Avg OC1610612736 EF&S \$ per Unit		0			
A113+1		OC-3221225472		Avg OC3221225472 EF&S \$ per Unit		0			
A114+1		OC-6442450944		Avg OC6442450944 EF&S \$ per Unit		0			

## Input No 2 Ring Summary

**Input No. 3****ABC Telephone Co MODEL**

Total Lines

0
---

- 1 Host  
 2 Lines Served  
 3 Lines Served Host/Remote  
 4 Lines Served DLC  
 5 Reserved  
 6 Reserved  
 7 Reserved  
 8 # of DLC's (Total D's below)  
 9 Reserved

1	2	3
Main Office	South Host	
0	0	0
	0	0
-	-	-
2	3	0

- 1 CSA  
 Type (Host,Remote D)  
 Lines Served: Ln 3

Main Office	South Host	
H	H	
0	0	

- 2 CSA  
 Type  
 Lines Served: Avg or Input

Remote A	West Remote	
R	R	
0	0	

- 3 CSA  
 Type  
 Lines Served

Remote B	North Remote	
R	R	
0	0	

- 4 CSA  
 Type  
 Lines Served

DLC #1	DLC #3	
D	D	
0	0	

- 5 CSA  
 Type  
 Lines Served

DLC #2	DLC #4	
D	D	
0	0	

- 6 CSA  
 Type  
 Lines Served

DLC #5	DLC #5	
D	D	
0	0	

- 7 CSA  
 Type  
 Lines Served

	East Remote	
	R	
	0	

- 8 CSA  
 Type  
 Lines Served


- 9 CSA  
 Type  
 Lines Served


- 10 CSA


# Input No. 3

## ABC Telephone Co. MODEL

Total Lines

0
---

- 1 Host
- 2 Lines Served
- 3 Lines Served Host/Remote
- 4 Lines Served DLC
- 5 Reserved
- 6 Reserved
- 7 Reserved
- 8 # of DLC's (Total D's below)
- 9 Reserved

1	2	3
Main Office	South Host	
0	0	0
-	-	-
-	-	-
-	-	-
2	3	0
-	-	-

Type

Host	Remote	DLC
-	-	-

Lines Served

# Input No. 3

## PBA TELRIC MODEL

Total Lines

- 1 Host
- 2 Lines Served
- 3 Lines Served Host/Remote
- 4 Lines Served DLC
- 5 Reserved
- 6 Reserved
- 7 Reserved
- 8 # of DLC's (Total D's below)
- 9 Reserved

4	
	0
	-
	-
	-
	0
	-

- 1 CSA  
Type (Host,Remote D)  
Lines Served: Ln 3


- 2 CSA  
Type  
Lines Served Avg or Input


- 3 CSA  
Type  
Lines Served


- 4 CSA  
Type  
Lines Served


- 5 CSA  
Type  
Lines Served


- 6 CSA  
Type  
Lines Served


- 7 CSA  
Type  
Lines Served


- 8 CSA  
Type  
Lines Served


- 9 CSA  
Type  
Lines Served


- 10 CSA


# Input No. 3

## PBA TELRIC MODEL

Total Lines

- 1 Host
- 2 Lines Served
- 3 Lines Served Host/Remote
- 4 Lines Served DLC
- 5 Reserved
- 6 Reserved
- 7 Reserved
- 8 # of DLC's (Total D's below)
- 9 Reserved

4	
	0
PR 1000 2000 3000	
	-
1000 2000 3000	
1000 2000 3000	
1000 2000 3000	
1000 2000 3000	0
1000 2000 3000	

Type  
Lines Served

PR 1000 2000 3000	
PR 1000 2000 3000	

**Fiber Facility Investment Unit Costs**

A.

**Basic Cost Data**

1 Cost per foot Fiber

Installation Per Ft Total	\$0.00	Labor + Material
# of Fibers	0	

2 Directional Boring (Includes 1 25 " conduit)

a Per Ft	\$0.00	Labor + Material
b. Conduit Ducts	0	
c Duct fill rate	0.00	

3. Splice Box

Per Box

\$0.00
--------

4. Fiber Splice Labor

\$0.00
--------

5. Cost per Pole 40ft.  
(in place cost)

\$0.00
--------

B.

**Installation Assumptions**

1 Average feet between fiber splices

0
---

2 Average pole spacing (Company Avg)

0
---

3 Telco Structure Share Poles

0.00%	% Poles owned by Telco
-------	------------------------

4 Telco Structure Share: Conduit

0.00%	% Conduit owned by Telco
-------	--------------------------

5 % Aerial Cable

0.00%	% Aerial owned by Telco
-------	-------------------------

**Input No 5**  
**ABC Telephone Co**  
**Forward Looking Switching Investment**

PBA TLERIC MODEL

Host #	Total	1	2	3	4	5	6	7	8	9	10	11	12
Host Name	Main Office	South Host	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lines Served	0	0	0	0	0	0	0	0	0	0	0	0	0

A	Switch Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	Per Line Investment excluding line port	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	Lines	0	0	0	0	0	0	0	0	0	0	0	0
3	Total Switching Equip Inv (Ln1*Ln2)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	Building/site Cost, Host	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	Number of Remotes	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Building/Pwr/Land Cost per Remote	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	Total Building/site Cost Remotes (Ln5*Ln6)	0	0	0	0	0	0	0	0	0	0	0	0
8	Total Switch Investment (Ln3+Ln4+Ln7)	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	# of DLCs Input 3 Ln 8	5	2	3	0	0	0	0	0	0	0	0	0

## Summary

I	Transport	<u>Source</u>	<u>Unit</u>
1	Switched Transport		
A	Transport Facility per minute-mile	Output 4 Ln 24a	= Output 4!F75
B	Transport Termination per minute	Output 4 Ln 24b	= Output 4!H76
2	Tandem Switching	Output 3 Ln 23	= Output 3!F68
3	Local Switching	Output 2 Ln 23	= Output 2!F70
4	Composite Non-Distance Sensitive Rate	Sum LL 1B + 2 + 3	=F16+F14+F12
5	At Average Miles	Ln 1a+Ln 4*WS3 Col F Ln 5	=F18+F11*WS3J24

= Input No 1'

PBA TELRIC MODEL

	<u>Investment</u>	<u>Source</u>	<u>Amount</u>
1	Direct Investment	WS 1, Line 6 Col B	=WS1!M22
2	Indirect Investment - Support Plant	Ln 1 X Support Plant Factor ( WS 2 Ln 9a)	=F11*WS2!D42
3	Indirect Investment Materials & Supplies	Ln 1 X Materials & Supplies Factor (WS 2 Ln 9b)	=F11*WS2!D43
4	Total Investment	Sum LI 1 - 3	=SUM(F11 F15)
	<u>Annual Charge Factors</u>		
5	Maintenance COE	WS 2 Ln 1b	=WS2!D14
6	Network and General Support Factor	WS 2 Ln 2	=WS2!D16
7	Network Operations Factor	WS 2 Ln 3	=WS2!D18
8	Depreciation Factor	WS 2 Ln 4b	=WS2!D22
9	Corporate Operations Factor	WS 2 Ln 5	=WS2!D26
10	Operating Taxes Factor	WS 2 Ln 6	=WS2!D28
11	CABS Billing Factor	WS 2 Ln 7a	=WS2!D30
12	Total Direct Annual Cost Factors	Sum LI 5 - 11	=SUM(F22 F35)
13	Depreciation- Support Plant	WS 2 Ln 4c	=WS2!D23
	<u>Return Factors, Adjusted for avg depreciation over ex</u>		
14	Direct Investment	WS 2 Ln 8b	=WS2!D35
15	Support Plant	WS 2 Ln 8d	=WS2!D37
16	Materials & Supplies	WS 2 Ln 8c	=WS2!D36
	<u>Annual Revenue Requirement</u>		
17	Expenses	Ln 1 X Ln 12 + Ln 2 X Ln 13	=F37 F11+F39*F13
18	Return		
a	Direct Plant	Ln 1 X Ln 14	=F44*F11
b	Support Plant	Ln 2 X Ln 15	=F46 F13
c	Materials & Supplies	Ln 3 X Ln 16	=F48 F15
d	Total Return	Sum LI 18a - 18c	=SUM(F55 F57)
19	Gross - up for Income Tax	(Input 1,Ln 5/(1 - Input 1 Ln 5))	= Input No 1 !H7
20	Income Tax Allowance	Ln 19 X Ln 18d	=F60*F58
21	Annual Revenue Requirement	Sum LI 17 + 18d + 20	=F62+F58+F52
	<u>Unit Cost Per MOU</u>		
22	Network MOU	WS 3 II Line 11 col (f)	=WS3!J10
23	Unit Cost Per MOU	Ln 21/ Ln 22	=F64/F68

=Input No

= Output 2

	<u>Investment</u>	<u>Source</u>	<u>Amount</u>
1	COE Cat 2 Direct Investment 1/	WS 1 Line 5 Col B	=WS1!M20
2	Support Plant 2/	Ln 1 X Support Plant Factor ( WS 2 Ln 9a)	=F11 WS2!D42
3	Materials & Supplies 3/	Ln 1 X Materials & Supplies Factor (WS 2 Ln 9b)	=F11 WS2!D43
4	Total Investment	Sum L1 1-3	=SUM(F11 F15)
	<u>Annual Charge Factors</u>		
5	Maintenance Expense Factor COE	WS 2 Ln 1b	=WS2!D14
6	Network Support & General Support Factor	WS 2 Ln 2	=WS2!D16
7	Network Operations Factor	WS 2 Ln 3	=WS2!D18
8	Depreciation Factor	WS 2 Ln 4b	=WS2!D22
9	Corporate Operations Factor	WS 2 Ln 5	=WS2!D26
10	Operating Taxes Factor	WS 2 Ln 6	=WS2!D28
11	CABS Billing Factor	WS 2 Ln 7	=WS2!D30
12	Total Direct Investment Factors	Sum L5 1-11	=SUM(F22 F34)
13	Depreciation Factor Support Plant	WS 2 Ln 4c	=WS2!D23
	<u>Return Factors, Adjusted for net depreciation over 6 years</u>		
14	Return - Direct Investment	WS 2 Ln 8b	=WS2!D35
15	Return - Support Plant	WS 2 Ln 8d	=WS2!D37
16	Return - Materials & Supplies	WS 2 Ln 8c	=WS2!D36
	<u>Annual Revenue Requirement</u>		
17	Expenses [(L1a x L2h) + (L1b x L2i)]	Ln 1 X Ln 12 + Ln 2 X Ln 13	=(+F11*F36)*(F13*F38)
18	Return	Ln 1 X Ln 14	=F11 F44
	a Direct Plant	Ln 2 X Ln 15	=F13*F46
	b Support Plant	Ln 3 X Ln 16	=F15*F48
	c Materials & Supplies	Sum L1 18a - 18c	=SUM(F55 F57)
	d Total Return		
19	Gross - up for Income Tax	(Input 1 Ln 5/(1- Input 1 Ln 5))	=Input No 1!H7
20	Income tax allowance	Ln 19 X Ln 18d	=F58 F60
21	Annual Revenue Requirement	Sum L1 17 + 18d + 20	=(+F52+F58+F62)
22	Tandem switched network minutes of use	WS3 ! Ln 2b Col f	=WS3!J16
23	Cost per Minute	Ln 21 / Ln 22	=IF(F64=0 0 + F64/F66)

= Input No

## PBA TELRIC MODEL

Investment	Source	CWF Amount	COE Amount
1 Transport Direct Investment per Circuit	WS 1 Ln 12 (10) Col 2 / WS 3 1 Ln 8	=WS1!M35/WS3!J32	=WS1!M30/WS3!J32
2 Support Plant 2/	Ln 1 X Support Plant Factor ( WS 2 Ln 8b)	=F12*WS2!D42	=H12*WS2!D42
3 Materials & Supplies 3/	Ln 1 X Materials & Supplies Factor (WS 2 Ln 8b)	=F12*WS2!D43	=H12*WS2!D43
4 Total Investment	Sum L1 1 - 3	=SUM(F12:F16)	=SUM(H12:H16)
<i>Annual Utilization Factors</i>			
5 Maintenance Expense Factor	WS 2 Ln 1a (b)	=WS2!D13	=WS2!D14
6 Network Support & General Support Fa-	WS 2 Ln 2	=WS2!D16	=F24
7 Network Operations Factor	WS 2 Ln 3	=WS2!D18	=F26
8 Depreciation Factor	WS 2 Ln 4a (b)	=WS2!D21	=WS2!D22
9 Corporate Operations Factor	WS 2 Ln 5	=WS2!D26	=F30
10 Operating Taxes Factor	WS 2 Ln 6	=WS2!D28	=F32
11 CABS Billing Factor	WS 2 Ln 7	=WS2!D30	=F34
12 Total Direct Investment Factors	Sum L1 5 - 11	=SUM(F22:F34)	=F36
13 Depreciation Factor Support Plant	WS 2 Ln 4c	=WS2!D23	=F38
<i>Return Factors, Adjusted for avg degree</i>			
14 Direct Investment	WS 2 Ln 8a (b)	=WS2!D35	=F42
15 Support Plant	WS 2 Ln 8d	=WS2!D37	=F44
16 Materials & Supplies	WS 2 Ln 8c	=WS2!D38	=F46
<i>Annual Revenue Requirement</i>			
17 Expenses	Ln 1 X Ln 12 + Ln 2 X Ln 13	=(-F12*F38)+(F14*F38)	=(-H12*H36)+(H14*H38)
18 Return	Ln 1 X Ln 14 a. Direct Plant b. Support Plant c. Materials & Supplies d. Total Return	=F12*F42 =F14*F44 =F18*F48 =SUM(F53:F55)	=H12*H42 =H14*H44 =H18*H48 =SUM(H53:H55)
19 Gross up for Income Tax	(Input 1 Ln 5(1) Input 1 Ln 5))	=Output 2!F60	=Output 2!F60
20 Income Tax Allowance	Ln 19 X Ln 18d	=F56 F58	=H56 H58
21 Annual Revenue Requirement	Sum L1 17 + 18d + 20	=F60+F58+F50	=H60+H58+H50
22 Monthly Revenue Requirement	Ln 21 / 12	=F62/12	=H62/12
<i>Unit Costs Per Month/Terminalita</i>			
23 Demand Units			
a Total inter-office minute-miles per circuit	WS 3 1 Ln 6 Col J / WS 3 1 Ln 7 Col J	=WS3!J27/WS3!J30	xxx
b Total inter-office minute per circuit per r	WS 3 1 Ln 4 Col J / WS 3 1 Ln 7 Col J	=WS3!J21/WS3!J30	xxx
24 Unit Costs			
a Transport facility cost per minute-mile	Ln 22 / Ln 23	=F64/F70	xxx
b Transport termination cost per minute	Ln 22 / Ln 23	=H64/H71	xxx

\*Input No

		Function	PBA TELRIC MODEL	Source	(A) National Amount	(B) Forward Looking Investment	(C) Forward-Looking Source
1		Working Locos			Input No 1 Ln 10 *Input No 1 H18	*K10	Input 1
2		Acc 2011 TPIS			Input No 1 Ln 11 *Input No 1 H17		
3		Acc 1220 Mail & Supp			Input No 1 Ln 12 *Input No 1 H18		
4a		Acc 2110 Subsidy Ass Land & Building Inv & Land & Building Inv Rent			Input No 1 Ln 13 *Input No 1 H19 Input 8 Ln A5 *SU11*Input No 51D14 D14 Input 8 Ln A8 *SU11*Input No 51D17 D17		
4b		Acc 2210 COE Swtch 1	Tandem Switching		Input No 1 Ln 14 *Input No 1 H20	*WP1 Switching?L11	Worksheet 2 Ln 3
4c		Acc 2210 COE Swtch 1	Local Switching		Input No 1 Ln 15 *Input No 1 H21	*WP1 Switching?L13	Worksheet 2 Ln 4
4d		Acc 2210 COE Swtch	Digital Switching		Input No 1 Ln 16 * Input No 1 H22		
4e		Acc 2220 COE Oper			Input No 1 Ln 17 *Input No 1 H23		
4f		Acc 2230COE Transm			Input No 1 Ln 18 *Input No 1 H24		
4g		Acc 2230 Cat 4 12.4			Input No 1 Ln 20 *Input No 1 H25	*WP2 Run: H52	Worksheet 2 II Col D Ln 5
4h		Acc 2410 C&WF	Transport Central Office		Input No 1 Ln 21 *Input No 1 H25		
4i		Acc 2410 C&WF Cat.	Non-DLC Cooper DLC Cooper & I		Input No 1 Ln 21 *Input No 1 H27	*WP2 Run: O23	WP2 I Col M Ln 24
4j		Acc 6110 New Sub 1			Input No 1 Ln 22 *Input No 1 H28		
4k		Acc 6120 Gen Sub 1			Input No 1 Ln 23 *Input No 1 H29		
4l		Acc 6210 6220 6230			Input No 1 Ln 24 *Input No 1 H30		
4m		Acc 6410 CWF Exp			Input No 1 Ln 25 *Input No 1 H31		
4n		Acc 6530 Net Off Exp			Input No 1 Ln 26 *Input No 1 H32		
4o		Acc 6510 Off Prod Ex			Input No 1 Ln 27 *Input No 1 H33		
4p		Dear Exp COE			Input No 1 Ln 28 *Input No 1 H34		
4q		Dear Exp CWF			Input No 1 Ln 29 *Input No 1 H35		
4r		Dear/Amort Exp. Sud			Input No 1 Ln 30 *Input No 1 H36		
4s		Acc 6710 6720 Corp			Input No 1 Ln 31 *Input No 1 H37		
4t		Acc 7200 Other Taxe			Input No 1 Ln 32 *Input No 1 H38		
4u		CABG Balanc Emergencies			Input No 1 Ln 33 *Input No 1 H39		
4v		Med Processing Expenses			Input No 1 Ln 34 *Input No 1 H40		
4w		Marketing Factor Expen			Input No 1 Ln 35 *Input No 1 H41		

#Input No 1 !

=WS1!A4

## PBA TELRIC MODEL

		<u>TELRIC Level</u>	<u>Source</u>
1	Maintenance Expense Factor		
a	CWF	=WS1!K43!+WS1!K32	W S 1 - Col A L18/Col /
b	COE	=WS1!K41/SUM(WS1!K24:K4)	W S 1 - Col A L15/Sum
2	Netw Supp & Gen Supp Factor	=SUM(WS1!K37:K39)/WS1!K	W S 1 (Sum Col A LL1
3	Network Operations Factor	=WS1!K45/WS1!K12	W S 1 - Col A L17/Col
4	Depreciation Factor		
a	CWF	=WS1!K51/WS1!K32	W S 1 - Col A L20/Col
b	COE	=WS1!K49/SUM(WS1!K24:K	W S 1 - Col A L19/Sum
c	Support Plant	=WS1!K53/WS1!K16	W S 1 - Col A L21/Col
d	Materials & Supplies	=Input No 1!H45	Input No 1 Ln 36
5	Corporate Operations Factor	=WS1!K55/WS1!K12	W S 1 - Col A L22/Col
6	Operating Taxes Factor	=WS1!K57/WS1!K12	W S 1 - Col A L23/Col
7a	CABS Billing Factor	=WS1!K59/WS1!K12	W S 1 - Col A L24/Col
8	Return Factors		
a	CWF	=((1-D\$38/2*D21) 0 1125	[1 - (L8e/2XL4a)] x 11 2!
b	COE	=((1 D\$38/2 D22) 0 1125	[1 - (L8e/2XL4b)] x 11 2!
c	Materials & Supplies	=((1-D\$38/2*D24) 0 1125	[1 - (L8e/2XL4d)] x 11 2!
d	Support Plant	=((1-D\$38/2 D23) 0 1125	[1 - (L8e/2XL4c)] x 11 2!
9	Secondary Investment Factors		
a	Support Plant	=((WS1!K16 WS1!K17 WS1!I	W S 1 - Col A, (L4a-L4I
b	Materials & Supplies	=WS1!K14/WS1!K12	W S 1 (Col A L3/Col A

**WS21A5**

=Input N

Total Swift	
1	Total Switching Investment
2	Tandem Switching Investment %
3	Tandem Switch Investment
4	Local Switch Investment

=Input No 5'C18  
 =WS1!K20/WS1!K24  
 =L9!L7  
 =+L7-CAT2

Input		Elbert,Rutha		A		B		C		D		E		F		G		H		I		J		K		L		M	
I		Ring #	Ln	Dates/ln	Affiliation			Structure	Share Amt			Fiber Inv	Date Inv																
				</td																									

LEE OLCH

TELRIC Model  
Tennessee CMRS Interconnection

Rate Development

9/28/2005

Line	Description	Source	Balance
1	Total Switching	Switch_Annual	#DIV/0!
	Transport		
2	Tandem Switching	Trnsprt_Annual	#DIV/0!
3	Local Switch Trunk Ports	Trnsprt_Annual	#DIV/0!
4	Circuit Equipment	Trnsprt_Annual	#DIV/0!
5	Cable & Wire Facilities	Trnsprt_Annual	#DIV/0!
6	Total Transport	L2+.. +L5	#DIV/0!
7	Total Transport and Termination	L1+L6	#DIV/0!
	Non-Network Expenses		
8	General Support Facility Cost	GSF_Annual	#DIV/0!
9	Common Cost Factor	Input_Other	0
10	Common Cost	(L7+L8)*L9	#DIV/0!
11	Interconnection Cost	L7+L8+L10	#DIV/0!
12	Uncollectibles Factor	Input_Other	0
13	Uncollectibles	L11*L12	#DIV/0!
14	Total Interconnection Cost	L1+L13	#DIV/0!
15	Minutes of use	Input_Other	-
16	Transport &Termination Rate	L14/L15	#DIV/0!

Line	Plant	Source	CAPCOST FACTORS	Annual Expense_Factors				Annual Direct Expense & Taxes E=A*D				Shared Expense Factor F INPUT_ Expense_Factors				Total Annual Cost H=C+E+G	
				Investment Amount A	Capital Factor B C=A*B	Annual Investment D	Direct Expense E=A*D	Annual Investment C=A*B	Direct Expense E=A*D	Annual Direct Expenses & Taxes E=A*D	Shared Expense Factor F INPUT_ Expense_Factors	Annual Indirect Expenses G=A*F	Annual Indirect Expenses G=A*F	Annual Indirect Expenses G=A*F	Annual Indirect Expenses G=A*F		
1	2212 Switch	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0 000000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
2	2111 Land	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
3	2121 Building	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
<b>Trunk Ports</b>																	
4	2212 Trunk Ports	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0 000000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	2111 Land	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	2121 Building	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	2232 Circuit Equipment	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
<b>CWF</b>																	
8	2411 Poles	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9	2421 Aerial	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10	2422 Underground	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	2423 Buried	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12	2441 Conduit	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

9/28/2005

TELRIC Model  
Tennessee CMRS Interconnection  
Transport\_Circuit Equipment Investment

Line	Circuit Equipment	Source	Material Cost A	Units B	Total Material Cost C=A*B	Install Cost D	Total Install Cost E=B*D	Fill Factor G	Common Transport Factor H	Transport Cost I=(F/G)*H
1	OC-48 ADM	INPUT_OTHER	-	-	-	-	-	0.00	0.00	#DIV/0!
2	OC-12 ADM	INPUT_OTHER	-	-	-	-	-	0.00	0.00	#DIV/0!
3	OC-3/DS1 Terminal Mux	INPUT_OTHER	-	-	-	-	-	0.00	0.00	#DIV/0!
4	Pigtails	INPUT_OTHER	-	-	-	-	-	0.00	0.00	#DIV/0!
5	Fiber Patch Panel	INPUT_OTHER	-	-	-	-	-	0.00	0.00	#DIV/0!
6	Channel Bank	INPUT_OTHER	-	-	-	-	-	0.00	0.00	#DIV/0!
7	Digital Cross Connect	INPUT_OTHER	-	-	-	-	-	0.00	0.00	#DIV/0!
8	OC-48 Regenerator	INPUT_OTHER	-	-	-	-	-	0.00	0.00	#DIV/0!
9	Total									#DIV/0!
	Chksum									

TELRIC Model  
Tennessee CMRS Interconnection

Transport\_CWF Investment

9/28/2005

Line	CWF	Source	Weighted Average Cost/Unit A	Units B	Total Cost C=A*B	Material Cost/Unit D	Total Material Cost E=B*D	Facility Cost F=C+E	Fill Factor G	Structure Factor H	Sharing Factor I	Common Transport Factor J	Common Transport Cost K=J*(F/G)*H*I
1 Poles	INPUT_OTHER	-	-	-	-	-	-	-	0.00	0.00	0.00	#DIV/0!	
2 Aerial	INPUT_OTHER	-	-	-	-	-	-	-	0.00	0.00	0.00	#DIV/0!	
3 Underground	INPUT_OTHER	-	-	-	-	-	-	-	0.00	0.00	0.00	#DIV/0!	
4 Buried	INPUT_OTHER	-	-	-	-	-	-	-	0.00	0.00	0.00	#DIV/0!	
5 Conduit	INPUT_OTHER	-	-	-	-	-	-	-	0.00	0.00	0.00	#DIV/0!	
6 Total		Chksum											#DIV/0!

Line	Description	Source	Direct			Shared			Annual Indirect Expenses $G=A*F$	Total Annual Cost $H=C+E+G$
			Investment Amount A	Annual Capital Cost Factor B	Annual Investment C=A*B	Direct Expense & Tax Factor D	Annual Direct Expenses & Taxes E=A*D	Shared Expense Factor F	INPUT_Expense_Factors	
1	2212 Switch	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2	2111 Land	INPUT_OTHER	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	2121 Buildings	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	Total				#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
<b>Switch 2:</b>										
5	2212 Switch	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	2111 Land	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	2121 Buildings	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8	Total				#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
<b>Switch 3:</b>										
9	2212 Switch	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10	2111 Land	INPUT_OTHER	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	2121 Buildings	INPUT_OTHER	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12	Total				#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
<b>Total Switch</b>										
13	2212 Switch	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
14	2111 Land	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	2121 Buildings	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16	Total				#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
<b>Chksum-Totals</b>										
	Chksum-Switch				#DIV/0!		#DIV/0!			
	Chksum-Land				#DIV/0!		#DIV/0!			
	Chksum-Bldg				#DIV/0!		#DIV/0!			

Switch 1. . . . . 0

Line	Equipment	Vendor Price A	Discount Factor B	Total Cost C=A*B	EF&I D (Note 1)	Power E (Note 2)	Total Switch F=C+D+E	Land G (Note 3)	Building H (Note 4)
1 Tandem Switching	-	-	0.00	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2 Local Switching	-	-	0.00	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3 Trunk Ports	-	-	0.00	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4 Total	-	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5 Total Investment	-	-	-	-	-	-	-	-	-

Note 1. D=(C/sumC)\*D\_L5

Note 2. E=(C/sumC)\*E\_L5

Note 3. G=(F/sumF)\*G\_L5

Note 4. H=(F/sumF)\*H\_L5

Switch 2

0

Line	Equipment	Vendor Price A	Discount Factor B	Total Cost C=A*B	EF&I D (Note 1)	Power E (Note 2)	Total Switch F=C+D+E	Land G (Note 3)	Building H (Note 4)
1 Local Switching	-	-	0.00	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2 Trunk Ports	-	-	0.00	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3 Total	-	-	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4 Total Investment	-	-	-	-	-	-	-	-	-

Note 1:  $D = (C/\text{sum}C) * D_{L4}$ Note 2:  $E = (C/\text{sum}C) * E_{L4}$ Note 3:  $G = (F/\text{sum}F) * G_{L4}$ Note 4:  $H = (F/\text{sum}F) * H_{L4}$

TELRIC Model  
Tennessee CMRS Interconnection

Switch 3      0

Line	Equipment	Vendor Price A	Discount Factor B	Total Cost C=A*B	EF&I D (Note 1)	Power E (Note 2)	Total Switch F=C+D+E	Land G (Note 3)	Building H (Note 4)
1	Local Switching	-	0.00	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2	Trunk Ports	-	0.00	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	Total	-	-	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	Total Investment	-	-	-	-	-	-	-	-

Note 1.  $D = (C/sumC) * D_{L4}$

Note 2  $E = (C/sumC) * E_{L4}$

Note 3  $G = (F/sumF) * G_{L4}$

Note 4.  $H = (F/sumF) * H_{L4}$

		Switch	Total
Line	Equipment	Vendor Price	
1	Tandem Switching	-	
2	Local Switching	-	#DIV/0!
3	Trunk Ports	-	#DIV/0!
4	Total	-	#DIV/0!
5	Checksum	-	#DIV/0!
	Input Total	-	#DIV/0!

Line	Plant	Source	Investment Amount A	Capital Cost Factor B	Annual Investment C=A*B	Direct Expense & Tax Factor D	Annual Direct Expenses & Taxes E=A*D	Total Annual Cost F=C+E
1	2111 Land	Input	-	0.000000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2	2112 Motor Vehicles	Input	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	2115 Garage Work Equipment	Input	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	2116 Other Work Equipment	Input	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	2121 Buildings	Input	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	2122 Furniture	Input	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	2123 1 Company Office Equip	Input	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8	2123 2 Company Comm Equip	Input	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9	2124 General Purpose Computers	Input	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10	Total							

	Vehicles
A Investment Type	2112
B Account Number	\$1,000
C Investment Amount	0.00%
D Cost of Debt	0.00%
E Return on Equity	0.00%
F % Debt	0.00%
G Book Life	#DIV/0!
H Tax Rate	5.00
I Tax Rate	0.00%

Line	Year	Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Capital/Liens																	
2	Gross Asset	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
3	Depreciation Reserve	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
4	Accumulated Deferred Income Tax	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
5	Net Asset	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
6	Taxes	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
7	Excess/Deficit	Ln11*(1/G)																
8	Interest	(Ln4*FD)	#DIV/0!															
9	Revenue Requirement	Ln5 * 8	#DIV/0!															
10	Deferred Tax Calculation																	
11	Depreciation (Book)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
12	Depreciation (Tax)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
13	Difference	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
14	Tax Rate	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
15	Deferred Tax Amount	Ln12*13	#DIV/0!															
16	Current Taxes	Ln8*14	#DIV/0!															
17	Accumulated Depreciation (Tax)	Ln11*16 prior	#DIV/0!															
18	NPV Revenue Requirement	Note 1	#DIV/0!															
19	NPV Rev Rec Converted to an Annuity	Note 2	#DIV/0!															
	Annual Capital Cost Factor	Ln 18/C	#DIV/0!															

Note 1 NPV is calculated as follows:  
 $NPV = [(n \cdot (1/(1 + interest\ rate)^t)) / (1 - (1 + interest\ rate)^{-n})]$  from  $t = 1$  to  $n$ , where  $n =$  the number of cash flows  
 Interest Rate = (% Debt \* Cost of Debt) + (1 - % Debt) \* Return on Equity))

Note 2 NPV Revenue Requirement Converted to an Annuity is calculated as follows:  
 The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest and Term.  
 The following formula calculates the periodic payment: Payment = (Principal \* (Interest + 1)) / ((1 - (Interest + 1)^(-n)))  
 where n = Book Life

Account Type	Vehicles
A	2112
B Account Number	\$ 0.00
C Investment Amount	0.00%
D Cost of Debt	0.00%
E Return on Equity	0.00%
F % Debt	0.00%
G Book Value	#DIV/0!
H Taxable	5.00
I Tax Rate	0.00%

Line Year	Source	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
1 Capital Items																		
2 Depreciation Reserve	C	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
3 Accumulated Deferred Income Tax	Ln1*2 prior	#DIV/0!																
4 Net Asset	Ln1*2+3	#DIV/0!																
5 Return on Equity	Ln4*1 F1'E	#DIV/0!																
6 Taxes																		
7 Depreciation (Book)	Ln1*1(G) Ln1*F1D	#DIV/0!																
8 Interest	Ln5 8	#DIV/0!																
9 Revenue Requirement																		
10 Deferred Tax Calculation																		
11 Depreciation (Book)	Ln7 Tax Table	#DIV/0!																
12 Difference	Ln10-11	#DIV/0!	0.00%	0.00%														
13 Tax Rate																		
14 Deferred Tax Amount	Ln12 13	#DIV/0!																
15 Current Taxes	Ln14	#DIV/0!	0.00	#DIV/0!														
16 Accumulated Depreciation (Tax)	Ln1*16 prior	#DIV/0!	1,000.00	1,000.00														
17 NPV Revenue Requirement	Note 1																	
18 NPV Ret. Ret. Converted to an Annuity	Note 2																	
19 Annual Capital Cost Factor	Ln16/C																	

A Investment Type	Vehicles	Line Year	Source	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
B Account Number	\$ 2112																		
C Investment Amount	\$ 0.000																		
D Cost of Debt	0.00%																		
E Return on Equity	0.00%																		
F % Debt	#DIV/0!																		
G Book Life	5.00																		
H Tax Rate	0.00%																		
I																			
Capital Items																			
1 Gross Asset	C																		
2 Depreciation Reserve	-#DIV/0!																		
3 Accumulated Deferred Income Tax	#DIV/0!																		
4 Net Asset	#DIV/0!																		
5 Return on Equity	#DIV/0!																		
6 Taxes																			
Expenditure																			
7 Depreciation (Book)	#DIV/0!																		
8 Interest	(#DIV/0!)																		
9 Revenue Requirement																			
10 Deferred Tax Calculation																			
11 Depreciation (Book)	#DIV/0!																		
12 Difference	#DIV/0!																		
13 Tax Rate	0.00%																		
14 Deferred Tax Amount																			
15 Current Taxes	#DIV/0!																		
16 Accumulated Depreciation (Tax)	#DIV/0!																		
17 NPV Revenue Requirement																			
18 NPV Tax Pay Converted to an Annuity	Note 1																		
19 Annual Capital Cost Factor	Note 2																		
	Ln 18/C																		

		Investment Type	Vehicles
A	B	Account Number	21-12
C	D	Accumulated Amount	\$ 0.00
E	F	Cost of Debt	0.0%
G	H	Return on Equity	0.0%
I	J	% Debt	0.0%
K	L	Book Life	5.00
M	N	Tax Life	5.00
O	P	Tax Rate	0.0%
	Line Year	Source	
1	Capital Item		49
2	Gross Asset	1,000.00	50
3	Depreciation Reserve	1,000.00	51
4	Accumulated Deferred Income Tax	1,000.00	52
5	Net Asset	1,000.00	53
6	Taxes		54
7	Excesses		55
8	Interest		56
9	Revenues Requirements:		57
10	Deferred Tax Calculation		58
11	Depreciation (Book)		59
12	Difference		60
13	Tax Rate		61
14	Deferred Tax Amount		62
15	Current Taxes		63
16	Accumulated Depreciation (Tax)		64
17	NPV Revenues Requirement		65
18	NPV Tax Rate Converted to an Annuity		66
19	Annual Capital Cost Factor		67
Note 1	Note 2		68
Ln 1-8	C		69

A	Investment Type																
B	Account Number																
C	Investment Amount	\$ 215,000															
D	Cost of Debt	0.00%															
E	Return on Equity	0.00%															
F	% Select	0.00%															
G	Book Life	#DIV/0!															
H	Tax Life	7 years															
I	At Rate	0.00%															
	Line Year																
	Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Capital Items																	
1 Gross Asset	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
2 Depreciation Reserve	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
3 Accumulated Deferred Income Tax	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
4 Net Asset	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
5 Return on Equity	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
6 Taxes																	
ExcessES																	
7 Depreciation (Book)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
8 Interest	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	(#DIV/0!)	
9 Revenue Requirement																	
Deferred Tax Calculation																	
10 Depreciation (Book)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
11 Depreciation (Tax)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
12 Difference	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
13 Tax Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
14 Deferred Tax Amount:																	
15 Current Taxes																	
16 Accumulated Depreciation (Tax)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
17 NPV Revenue Requirement																	
18 NPV Tax Red Converted to an Annuity	Note 1 Note 2 Note 3	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
19 Annual Capital Cost Factor	Ln 18 / C	142.80	387.80	582.70	887.80	778.10	888.10	955.40	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	

Note 1 NPV is calculated as follows

$$NPV = (Y_{sub} / (1 - interest\ rate))^{n-1}$$
 from 1 to n, where n = the number of cash flows

Interest Rate = ((% Debt \* Cost of Debt) + (1 - % Debt) \* Return on Equity))

Note 2 NPV Revenue Requirement Converted to an Annuity is calculated as follows

The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest and Term

The following formula calculates the periodic payment: Payment = (Principal \* interest) / (1 - (interest \* 1^n))

where n = Book Life

A Investment Type	B Account Number	C Investment Amount	D Cost of Debt	E Return on Equity	F Net Debt	G Book CAGR	H Tax Life	I Tax Rate	Line Year	Source	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
1 Capital Items		\$ 2,150	\$ 0.00%	0.00%	0.00%	#DIV/0!	7.00	0.00%																			
2 Depreciation Reserve		\$ 0.00	\$ 0.00%	0.00%	0.00%	#DIV/0!																					
3 Accumulated Deferred Income Tax						#DIV/0!																					
4 Net Asset						#DIV/0!																					
5 Return on Equity						#DIV/0!																					
6 Taxes						#DIV/0!																					
7 Depreciation						#DIV/0!																					
8 Interest						#DIV/0!																					
9 Revenue Requirement						#DIV/0!																					
10 Deferred Tax Calculation						#DIV/0!																					
11 Depreciation (Book)						#DIV/0!																					
12 Depreciation (Tax)						#DIV/0!																					
13 Tax Ratio						#DIV/0!																					
14 Deferred Tax Amount						#DIV/0!																					
15 Current Taxes						#DIV/0!																					
16 Accumulated Depreciation (Tax)						#DIV/0!																					
17 NPIV Revenue Requirement						#DIV/0!																					
18 NPIV Rev Rec Converted to an Annuity						#DIV/0!																					
19 Annual Capital Cost (Annual)						#DIV/0!																					

	Line Year	Source	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
<b>Investment Types</b>																		
A Investment Type																		
B Account Number																		
C Cost of Debt			\$ 2115															
D Investment Amount			\$ 0.00%															
E Cost of Equity			0.00%															
F Return on Equity			0.00%															
G % Debt			#DIV/0!															
H Book Value			7.00															
I Tax Rate			0.00%															
<b>Capital Items</b>																		
1 Gross Assets			1,000.00															
2 Depreciation Reserve			#DIV/0!															
3 Accumulated Deferred Income Tax			#DIV/0!															
4 Net Asset			#DIV/0!															
5 Return on Equity			#DIV/0!															
6 Taxes			#DIV/0!															
7 Depreciation (Book)			#DIV/0!															
8 Interest			#DIV/0!															
<b>Revenue Requirements</b>																		
9 Revenue Requirements			#DIV/0!															
<b>Deferred Tax Calculation</b>																		
10 Depreciation (Book)			#DIV/0!															
11 Depreciation (Tax)			#DIV/0!															
12 Difference			#DIV/0!															
13 Tax Rate			0.00%															
14 Deferred Tax Amount			#DIV/0!															
15 Current Taxes			#DIV/0!															
16 Accumulated Depreciation (Tax)			#DIV/0!															
17 NPV Revenue Requirement			#DIV/0!															
18 NPV Rev Rec Converted to an Annuity			#DIV/0!															
19 Annual Capital Cost Factor			#DIV/0!															





			Line Year		Source	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
A Investment Type	B	Owe																			
C Account Number	D	2110	\$ 0.00																		
E Investment Amount	F	0.00%	0.00%																		
G Cost of Debt	H	0.00%	0.00%																		
I % Debt	J	#DIV/0!	7.00																		
K Book Life	L	Tax Life																			
M Tax Rate	N																				
O Capital Items	P																				
Q Gross Assets	R	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
S Depreciation Reserve	T	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
U Accumulated Deferred Income Tax	V	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
W Net Asset	X	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Y Return on Equity	Z	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
A Taxes	B	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
C Exemption	D	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
E Deduction (Book)	F	Ln1 (16)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
G Interest	H	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
I Revenue Requirement	J	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
K Deferred Tax Calculation	L																				
M Depreciation (Book)	N	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
O Depreciation (Tax)	P	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Q Difference	R	Ln10-11	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
S Tax Rate	T	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
U Deferred Tax Amount	V	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
W Current Taxes	X	Ln12*13	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Y Accumulated Depreciation (Tax)	Z	Ln11+16 prior	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
A NPV	B	Revenue Requirement	C	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
E Rev Req Converted to an Annuity	F	Note 1	G	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
H Note 2	I	1,000.00	J	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
I Annual Capital Cost Factor	J	Ln18/C																			













A Investment Type	Furniture
B Account Number	2122
C Investment Amount	\$1,000
D Cost of Debt	0.00%
E Return on Equity	0.00%
F % Debt	0.00%
G Book Life	#DIV/0!
H Tax Life	7.00
I Tax Rate	0.00%

Line	Year	Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Capital Items																	
2	Gross Asset		1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
3	Depreciation Reserve		#DIV/0!															
4	Accumulated Deferred Income Tax		#DIV/0!															
5	Net Asset		#DIV/0!															
6	Taxes		#DIV/0!															
7	Excess/Deficit		#DIV/0!															
8	Interest		#DIV/0!															
9	Revenue Requirement		#DIV/0!															
10	Deferred Tax Calculation																	
11	Depreciation (Book)		#DIV/0!															
12	Depreciation (Tax)		#DIV/0!															
13	Difference		#DIV/0!															
14	Tax Rate		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
15	Deferred Tax Amount		#DIV/0!															
16	Current Taxes		#DIV/0!															
17	Accumulated Depreciation (Tax)		#DIV/0!															
18	NPV Revenue Requirement on An Amorty	Note 1	142.90	387.80	562.70	667.60	776.00	885.10	995.40	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
19	Annual Capital Cost Factor	Note 2	#DIV/0!															

Note 1 NPV is calculated as follows:

$$NPV = (Y_{sub1} / (1 + Interest\ rate)) ^ n$$

Interest Rate = (% Debt \* Cost of Debt) + (1 % Debt) \* Return on Equity}}

Note 2 NPV Revenue Requirement Converted to an Amorty is calculated as follows:

The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest and Term where n = Book Life



A	B	C	D	E	F	G	H	I
Line	Year	Investment Type						
1		Capital Item						
1		Great Asset	\$1,000					
2		Depreciation Reserve	0.00%					
3		Accumulated Deferred Income Tax	0.00%					
4		Net Asset	0.00%					
5		Return on Equity	0.00%					
6		Taxes	#DIV/0!					
7		Expenditure						
7		Depreciation (Book)						
8		Interest						
9		Revenue Requirement:						
10		Deferred Tax Calculation						
11		Depreciation (Book)						
11		Depreciation (Tax)						
12		Difference						
13		Tax Rate						
14		Deferred Tax Amount						
15		Current Taxes						
16		Accumulated Depreciation (Tax)						
17		NPV Revenue Requirement						
18		NPV Rev Rec Converted to an Annuity						
19		Annual Capital Cost Factor						
		Notes 1						
		Notes 2						
		Ln 18/C						

A Investment Type	B Account Number	C Future Value	D Investment Amount	E Cost of Debt	F Return on Equity	G % Debt	H Book Life	I Tax Life	J Tax Rate					
Line	Year	Source	40	50	51	52	53	54	55	56	57	58	59	60
1 Capital Items														
2 Gross Asset		\$ 0.00												
3 Depreciation Reserve		0.00%												
4 Accumulated Deferred Income Tax		0.00%												
5 Net Asset		0.00%												
6 Taxes														
7 Expenses														
8 Depreciation (Book)														
9 Interest														
10 Revenue Requirement														
11 Deferred Tax Calculation														
12 Depreciation (Book)														
13 Depreciation (Tax)														
14 Difference														
15 Tax Rate														
16 Deferred Tax Amount														
17 Current Taxes														
18 Accumulated Depreciation (Tax)														
19 Annual Capital Cost Factor														
20 NPIV Requirements														
21 NPIV Req. Rec. Converted to an Annuity														
22 Annual Capital Cost Factor														
23 Note 1														
24 Note 2														
25 Note 3														
26 Note 4														
27 Note 5														
28 Note 6														
29 Note 7														
30 Note 8														
31 Note 9														
32 Note 10														
33 Note 11														
34 Note 12														
35 Note 13														
36 Note 14														
37 Note 15														
38 Note 16														
39 Note 17														
40 Note 18														
41 Note 19														
42 Note 20														
43 Note 21														
44 Note 22														
45 Note 23														
46 Note 24														
47 Note 25														
48 Note 26														
49 Note 27														
50 Note 28														
51 Note 29														
52 Note 30														
53 Note 31														
54 Note 32														
55 Note 33														
56 Note 34														
57 Note 35														
58 Note 36														
59 Note 37														
60 Note 38														

			Office Equip																
A	Investment Type	2122.1																	
B	Account Number	\$1,000																	
C	Investment Amount	0.00%																	
D	Cost of Debt	0.00%																	
E	Return on Equity	0.00%																	
F	% Debt	#DIV/0!																	
G	Book Life	7.00																	
H	Tax Life	7.00																	
I	Term Rate	0.00%																	
	Line Year	Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
1	Gross Asset	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
2	Depreciation Reserve	#DIV/0!																	
3	Accumulated Deferred Income Tax	LN7*2 prior																	
4	Net Asset	LN1*2+3																	
5	Return on Equity	LN4*(1-F1)*E																	
6	Taxes	LN5 (I1-I)																	
7	Expenditure	LN11*1/G																	
8	Interest	#DIV/0!																	
9	Revenue Requirement	LN5 * B																	
	Deferred Tax Calculation																		
10	Depreciation (Book)	LN7																	
11	Depreciation (Tax)	LN7*2 prior																	
12	Difference	LN10-11																	
13	Tax Rate	LN12*13																	
14	Deferred Tax Amount	LN12*14																	
15	Current Taxes	LN12*14																	
16	Accumulated Depreciation (Tax)	LN11*16 prior																	
17	NPV - Revenue Requirement	LN12*16																	
18	NPV - Rev Rec Converted to an Annuity	Note 1	Note 1	Note 2															
19	Annual Capital Cost Factor	LN18/C																	

Note 1 NPV is calculated as follows:

$$NPV = (1 + r)^{-1} / (1 + r)^n \text{ where } n = \text{the number of cash flows}$$

Interest Rate = (% Debt Cost of Debt) \* (1 - % Debt)

Return on Equity

Note 2 NPV - Revenue Requirement Converted to an Annuity is calculated as follows:

The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest, and Term.

The following formula calculates the periodic payment. Payment = (Principal \* (interest / (1 - (interest + 1)^(-n))))

where n = Book Life

A Investment Type	B Office/Region	C Account Number	D Investment Amount	E Cost of Debt	F Return on Equity	G % Debt on Equity	H Book/Liq Tax Rate	I #DIV/0!											
Line	Year		Source	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1 Capital Items																			
2 Goodwill			\$ 2,121																
3 Depreciation Reserve			\$ 0.00																
4 Accumulated Deferred Income Tax			0.00%																
5 Net Asset																			
6 Taxes																			
7 Expenses																			
8 Interest																			
9 Revenue Requirements																			
10 Deferred Tax Calculation																			
11 Depreciation (Book)																			
12 Difference																			
13 Tax Rate																			
14 Deferred Tax Amount																			
15 Current Taxes																			
16 Accumulated Depreciation (Tax)																			
17 NPI Revenue Requirement																			
18 NPI Rev Req Converted to an Annuity																			
19 Annual Capital Cost Factor																			
20																			
21																			
22																			
23																			
24																			
25																			
26																			
27																			
28																			
29																			
30																			
31																			
32																			

A	Investment Type	Office	Year	Source	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
B	Account Number	2121			\$1,000															
C	Investment Amount	0.00%																		
D	Cost of Debt	0.00%																		
E	Return on Equity	0.00%																		
F	% Debt																			
G	Book Csh	#DIV/0!																		
H	Tax Life	7.00																		
I	Tax Rate	0.00%																		
<b>Line Year</b>																				
<b>Capital Items</b>																				
1	Goodwill	C																		
2	Depreciation Reserve	L=7+2 prior																		
3	Accumulated Deferred Income Tax	L=1+4+3 prior																		
4	Net Assets	L=1+2+3																		
5	Return on Equity	L=4*(1-F)*E																		
6	Taxes	L=5*(1-t)																		
<b>Expenditures</b>																				
7	Depreciation (Book)	L=1*(1/G) (L=4*F*D)																		
8	Interest	L=5																		
<b>Revenue Requirement</b>																				
<b>Deferred Tax Calculation</b>																				
10	Depreciation (Book)	L=7 Tax Table																		
11	Depreciation (Tax)	L=10-11																		
12	Difference																			
13	Tax Rate																			
14	Deferred Tax Amount	L=12*13																		
15	Current Taxes	L=9+14																		
16	Accumulated Depreciation (Tax)	L=11+16 prior																		
17	NPV Revenue Requirement																			
18	NPV Rev Rec Converted to an Annuity	Note 1																		
		Note 2																		
		L=16+C																		

	Investment Type	Office Fund	Line Year
A	Investment Type	2,221	
B	Account Number	\$ 0.00	
C	Investment Amount	0.00%	
D	Cost of Debt	0.00%	
E	Return on Equity	0.00%	
F	% Debt		
G	Book Life	#DIV/0!	
H	Tax Life	7.00	
I	Tax Rate	0.00%	
			Source
		49	50
		51	52
		53	54
		55	56
		57	58
		59	60
1	Capital Items		
2	Goodwill	1,000.00	1,000.00
3	Accumulated Reserve	#DIV/0!	#DIV/0!
4	Accumulated Deferred Income Tax	#DIV/0!	#DIV/0!
5	Net Assets	#DIV/0!	#DIV/0!
6	Return on Equity	#DIV/0!	#DIV/0!
7	Taxes	#DIV/0!	#DIV/0!
8	Expenditures	#DIV/0!	#DIV/0!
9	Depreciation (Book)	#DIV/0!	#DIV/0!
10	Interest	#DIV/0!	#DIV/0!
11	Reverse Requirement	#DIV/0!	#DIV/0!
12	Deferred Tax Calculation		
13	Depreciation (Book)	#DIV/0!	#DIV/0!
14	Depreciation (Tax)	#DIV/0!	#DIV/0!
15	Difference	#DIV/0!	#DIV/0!
16	Tax Rate	#DIV/0!	#DIV/0!
17	Deferred Tax Amount	#DIV/0!	#DIV/0!
18	Current Taxes	#DIV/0!	#DIV/0!
19	Accumulated Depreciation (Tax)	#DIV/0!	#DIV/0!
20	NPI Revenue Requirements	#DIV/0!	#DIV/0!
21	NPI Rev Rec Converted to an Annuity	#DIV/0!	#DIV/0!
22	Annual Capital Cost Factor	#DIV/0!	#DIV/0!

A Investment Type	Com. Equit.
B Account Number	21232
C Investment Amount	\$1,000
D Cost of Debt	0.00%
E Return on Equity	0.00%
F % Debt	#DIV/0!
G Book Life	7.00
H Tax Rate	0.00%
I	

Line Year	Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Capital Items																	
2 Gross Assets																	
3 Depreciation Reserve																	
4 Accumulated Deferred Income Tax																	
5 Net Asset																	
6 Return on Equity																	
7 Taxes																	
8 Expenses																	
9 Revenue Requirement																	
10 Deferred Tax Calculation																	
11 Depreciation (Book)																	
12 Interest																	
13 Tax Rate																	
14 Deferred Tax Amount																	
15 Current Taxes																	
16 Accumulated Depreciation (Tax)																	
17 NPV, Revenue Requirements																	
18 NPV, Rev. Converged to an Annuity																	
19 Annual Capital Cost Factor																	

Note 1: NPV is calculated as follows:

$$NPV = \sum_{i=1}^n \frac{CF_i}{(1 + interest\ rate)^i}$$

Note 2: Interest Rate = (% Debt \* Cost of Debt) + (1 - % Debt) \* Return on Equity

The interest rate calculation is the same as in Note 1. The component parts are Principal, Interest, and Term.

The following formula calculates the periodic payment: Payment = (Principal \* (Interest / (1 - (interest + 1)^(-n)))) where n = Book Life

		Com Equip	Line Year	Source	17	18	19	20	21	22	23	24	25	-	26	27	28	29	30	31	32
A	Investment Type																				
B	Account Number	21232																			
C	Investment Amount	\$ 0.00																			
D	Cost of Debt	0.00%																			
E	Return on Equity	0.00%																			
F	% Debt																				
G	Book Life	#DIV/0!																			
H	Tax Life	7.00																			
I	Tax Rate	0.05%																			
Capital Items																					
1	Gross Assets	1,000.00																			
2	Depreciation Reserve	#DIV/0!																			
3	Accumulated Deferred Income Tax	#DIV/0!																			
4	Net Asset	#DIV/0!																			
5	Return on Equity	#DIV/0!																			
6	Taxes	#DIV/0!																			
Excesses																					
7	Depreciation (Book)	#DIV/0!																			
8	Interest	#DIV/0!																			
9	Revenue Requirement	#DIV/0!																			
Deferred Tax Calculation																					
10	Depreciation (Book)	#DIV/0!																			
11	Depreciation (Tax)	#DIV/0!																			
12	Difference	#DIV/0!																			
13	Tax Rate	0.05%																			
14	Deferred Tax Amount	#DIV/0!																			
15	Current Taxes	#DIV/0!																			
16	Accumulated Depreciation (Tax)	#DIV/0!																			
17	NPV Revenue Requirement	Note 1																			
18	NPV Rev/Risk Converted to an Annuity	Note 2																			
19	Annual Capital Cost Factor	#DIV/0!																			

		Line Year	Source	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
A	Investment Type		Com Equip																
B	Account Number		21432																
C	Investment Amount	\$1,000																	
D	Cost of Debt	0.0%																	
E	Return on Equity	0.0%																	
F	% Debt	0.0%																	
G	Book Life	#DIV/0!																	
H	Tax Life	7.00																	
I	Tax Rate	0.005%																	
	Capital Items																		
1	Gross Assets	1,000.00																	
2	Depreciation Reserve	#DIV/0!																	
3	Accumulated Deferred Income Tax	#DIV/0!																	
4	Net Asset	#DIV/0!																	
5	Return on Equity	#DIV/0!																	
6	Taxes	#DIV/0!																	
7	Depreciation (Book)	#DIV/0!																	
8	Interest	#DIV/0!																	
9	Revenue Requirement	#DIV/0!																	
	Deferred Tax Calculation																		
10	Depreciation (Book)	#DIV/0!																	
11	Depreciation (Tax)	#DIV/0!																	
12	Difference	#DIV/0!																	
13	Tax Rate	0.005%																	
14	Deferred Tax Amount	#DIV/0!																	
15	Current Taxes	#DIV/0!																	
16	Accumulated Depreciation (Tax)	#DIV/0!																	
17	NPV Revenue Requirement	Note 1																	
18	NPV Rev Tax Converted to an Annuity	Note 2																	
19	Annual Capital Cost Factor	#DIV/0!																	



	B	C	D	E	F	G	H
Investment Type	GFC						
Account Number	2124						
Investment Amount	\$1,000						
Cost of Debt	0.00%						
Return on Equity	0.00%						
% Debt	0.00%						
Book Value	#DIV/0!						
Tax Life	5.00						
Tax Rate	0.00%						
Capital Utilization							
1 Gross Asset							
2 Depreciation Reserve							
3 Accumulated Deferred Income Tax							
4 Net Asset							
5 Return on Equity							
6 Taxes							
Excess Earnings							
7 Depreciation (Book)							
8 Interest							
9 Revenue Requirement							
Deferred Tax Calculation							
10 Depreciation (Book)							
11 Depreciation (Tax)							
12 Difference							
13 Tax Rate							
14 Deferred Tax Amount							
15 Current Taxes							
Tax Table							
16 Accumulated Depreciation (Tax)							
17 Rev Req. Return Requirement							
18 Rev Req. Recg. Converted to an Annuity							
19 Annual Capital Cost Factor							

Note 1 NPV is calculated as follows

**NPV =  $(\text{Value of cash flow}_1 / (1 + \text{Interest rate})^1) + (\text{Value of cash flow}_2 / (1 + \text{Interest rate})^2) + \dots + (\text{Value of cash flow}_n / (1 + \text{Interest rate})^n)$**

**Interest Rate =  $((\% \text{ Debt} * \text{Cost of Debt}) + (1 - \text{\% Debt}) * \text{Return on Equity})$**

Note 2 NPIV Revenue Requirement Converted to an Annuity is calculated as follows

The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest and Term. The following formula calculates the periodic payment:

$$\text{Payment} = (\text{Principal} * (\text{Interest} / (1 - (1 + \text{Interest})^{-\text{Term}})))$$

where n = Book Life





	Line	Year	Source	49	50	51	52	53	54	55	56	57	58	59	60
<b>Capital Items</b>															
1	Open Asset			1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
2	Depreciation Reserve			#DIV/0!											
3	Accumulated Deferred Income Tax			#DIV/0!											
4	Net Assets			#DIV/0!											
5	Return on Equity			#DIV/0!											
6	Taxes			#DIV/0!											
<b>Expenditures</b>															
7	Depreciation (Book)			Ln1*(1/G)											
8	Interest			#DIV/0!											
9	Revenue Requirement			#DIV/0!											
<b>Deferred Tax Calculation</b>															
10	Depreciation (Book)			Ln7											
11	Depreciation (Tax)			#DIV/0!											
12	Difference			Ln10											
13	Tax Rate			0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
14	Deferred Tax Amount			#DIV/0!											
15	Current Taxes			Ln8+14											
16	Accumulated Depreciation (Tax)			Ln11+16 prior											
17	NPV: Revenue Requirement			Note 1											
18	NPV: Rev Req Converted to an Annuity			Note 2											
19	Annual Capital Cost Factor			Ln18 / C											

Line	Year	Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>Capital Items</b>																	
B	Investment Type	Switch															
C	Account Number	2212															
D	Investment Amount	\$1,000															
E	Cost of Debt	0.00%															
F	Return on Equity	0.00%															
G	% of Debt	#DIV/0!															
H	Book Life	5															
I	Tax Life	0.00%															
<b>Expenditures</b>																	
7	Depreciation (Book)	#DIV/0!															
8	Interest	(Ln4*F1)*D															
9	Revenue Requirements	Ln5*#(1-i)															
<b>Deferred Tax Calculation</b>																	
10	Depreciation (Book)	Ln7*Tax Table	#DIV/0!														
11	Depreciation (Tax)	Ln11	#DIV/0!														
12	Difference	#DIV/0!	0.00%	#DIV/0!	0.00%	#DIV/0!	0.00%	#DIV/0!	0.00%	#DIV/0!	0.00%	#DIV/0!	0.00%	#DIV/0!	0.00%	#DIV/0!	0.00%
13	Tax Rate																
14	Deferred Tax Amount	Ln12*#(1-i)	#DIV/0!														
15	Current Taxes	Ln8*#(1-i)	#DIV/0!														
16	Accumulated Depreciation (Tax)	200.00	#DIV/0!														
17	NPV: Revenue Requirement	Note 1	#DIV/0!														
18	NPV: Raw Req Converted to an Annuity	Note 2	#DIV/0!														
19	Annual Capital Cost Factor	Ln18/C	#DIV/0!														

Note 1 NPV is calculated as follows:

$$NPV = (v \cdot \text{sub } i / (1 + \text{Interest rate})^n) \text{ for } i = 1 \text{ to } n \text{ where } n = \text{the number of cash flows}$$

Interest Rate = ((% Debt \* Cost of Debt) + (% % Debt) \* Return on Equity))

Note 2 NPV: Revenue Requirement Converted to an Annuity is calculated as follows:

The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest, and Term.

The following formula calculates the periodic payment: Payment = (Principal \* (Interest / (1 - (interest \* (1 - n)))) / Book L16

	A	B	C	D	E	F	G	H	I	Line	Year
	Investment Type	Switch	\$ 22.2	\$ 0.00	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	17	
	Account Number		\$ 0.00	0.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	18	Sources
1 Capital Items										20	21
2 Depreciation Reserve										22	23
3 Accumulated Deferred Income Tax										24	25
4 Net Asset										26	27
5 Return on Equity										28	29
6 Taxes										30	31
7 Excesses										32	
8 Discretion (Book)											
9 Revenue Requirement											
10 Deferred Tax Calculation											
11 Discretion (Book)											
12 Discretion (Tax)											
13 Difference											
14 Deferred Tax Amount											
15 Current Taxes											
16 Accumulated Depreciation (Tax)											
17 NPV Revenue Requirement											
18 NPV Rev Req Converted to an Annuity											
19 Annual Capital Cost Factor											

A	B	C	D	E	F	G	H	I	Line	Year
Investment Type	Stock	22.2								
Account Number	\$1,000	0.00%								
Investment Amount	0.00%	0.00%								
Cost of Debt										
Return on Equity										
% Debt										
Book Value	#DIV/0!	5.00								
Tax Rate		0.00%								
Capital Items	Source	33	34	35	36	37	38	39	40	41
1 Gross Asset		1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
2 Depreciation Reserve		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3 Accumulated Deferred Income Tax		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4 Net Asset		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5 Return on Equity		Ln#11 F1'E	Ln#11 U11	#DIV/0!						
6 Taxes		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Expenditures		Ln#11'1(G)	Ln#11'1(F1'D)	#DIV/0!						
7 Depreciation (Book)		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8 Interest		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9 Revenue Requirement		Ln# 8	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10 Deferred Tax Calculation		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11 Depreciation (Tax)		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12 Difference		Ln#10-11	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13 Tax Rate		0.00%								
14 Deferred Tax Amount		Ln#12'13	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15 Current Taxes		Ln#14	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16 Accumulated Depreciation (Tax)		Ln#11-18 prior	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
17 NPV Revenue Requirement		Note 1								
18 NPV Rev Rec Converted to an Annuity		Note 2								
19 Annual Capital Cost Factor		Ln#19/C								

Line	Year	Source	49	50	51	52	53	54	55	56	57	58	59
<b>Capital Items</b>													
<b>A</b>		Switch											
<b>B</b>		Account Number	2212										
<b>C</b>		Investment Amount	\$ 0.00										
<b>D</b>		Cost of Debt	0.00%										
<b>E</b>		Return on Equity	0.00%										
<b>F</b>		% Debt	0.00%										
<b>G</b>		Book Life	#DIV/0!										
<b>H</b>		Tax Life	5.00										
<b>I</b>		Tax Rate	0.00%										
<b>Revenue Requirements</b>													
<b>1</b>		Gas & Fuel	1,000.00										
<b>2</b>		Depreciation Reserve	#DIV/0!										
<b>3</b>		Accumulated Deferred Income Tax	-#DIV/0!										
<b>4</b>		Net Asset	#DIV/0!										
<b>5</b>		Return on Equity	#DIV/0!										
<b>6</b>		Taxes	#DIV/0!										
<b>7</b>		Depreciation (Book)	#DIV/0!										
<b>8</b>		Interest	#DIV/0!										
<b>9</b>		Revenue Requirement	#DIV/0!										
<b>Deferred Tax Calculations</b>													
<b>10</b>		Depreciation (Book)	#DIV/0!										
<b>11</b>		Depreciation (Tax)	#DIV/0!										
<b>12</b>		Difference	#DIV/0!										
<b>13</b>		Tax Rate	0.00%										
<b>14</b>		Deferred Tax Amount	#DIV/0!										
<b>15</b>		Current Taxes	#DIV/0!										
<b>16</b>		Accumulated Depreciation (Tax)	#DIV/0!										
<b>17</b>		NPV Revenue Requirement	#DIV/0!										
<b>18</b>		NPV Rev Rec Converted to an Annuity	Note 1										
<b>19</b>		Annual Capital Cost Factor	Note 2										
			#DIV/0!										

Note 1 NPV is calculated as follows

**Interest Rate = ((% Debt \* Cost of Debt) + (1 - % Debt) \* Return on Equity))**

Note 2 NPV Revenue Requirement (converted to an Amorty) is calculated as follows  
 The interest rate calculation is the same as in Note 1. The component parts are Principal, Interest and Term.  
 The following formula calculates the periodic payment. 
$$\text{Payment} = \frac{\text{Principal} * (\text{Interest} / (1 - (\text{Interest} + 1)^{-n}))}{1}$$

where n = Book Life

	Investment Type	Ratio	Line	Year	Source	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
A	Investment Number	Ratio	2231																		
B	Cost of Debt	\$ 0.00	0.00%	0.00%																	
C	Return on Equity	0.00%	0.00%	0.00%																	
D	Book Life	#DIV/0!	5.00	0.00%																	
E	Tax Life																				
F	Tax Rate																				
G	Capital Lease																				
H	Cost of Capital	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	
I	Depreciation Reserve	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
J	Accumulated Deferred Income Tax	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
K	Net Asset	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
L	Return on Equity	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
M	Taxes																				
N	Expenditure	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
O	Depreciation (Book)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
P	Interest	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Q	Revenue Requirement	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
R	Deferred Tax Calculation																				
S	Depreciation (Book)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
T	Depreciation (Tax)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
U	Difference	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
V	Tax Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W	Deferred Tax Amount	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
X	Current Taxes	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Y	Accumulated Depreciation (Tax)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Z	NPV Revenue Requirement	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
AA	NPV Rev Rec Converted to an Annuity	Note 1																			
AB	Annual Capital Cost Factor	Note 2																			
AC		Ln 18 / C																			



A Investment Type	Radio	B Account Number	2231	C Investment Amount	\$1,000	D Cost of Debt	0.00%	E Return on Equity	0.00%	F % D/Debt	0.00%	G Book Life	#DIV/0!	H Tax Life	5.00	I Tax Rate	0.00%
Line	Year	Source															
		40	50	51	52	53	54	55	56	57	58	59	60				
1	General Ledger																
2	Gross Asset																
3	Depreciation Reserve																
4	Accumulated Deferred Income Tax																
5	Net Asset																
6	Return on Equity																
7	Taxes																
8	Description (Book)																
9	Interest																
10	Revenue Requirement																
11	Deferred Tax Calculation																
12	Depreciation (Book)																
13	Depreciation (Tax)																
14	Difference																
15	Tax Rate																
16	Deferred Tax Amount																
17	Current Taxes																
18	Accumulated Depreciation (Tax)																
19	NPV Revenue Requirement																
20	NPV Rev Rec Converted to an Annuity																
21	Annual Capital Cost Factor																







	Line	Year	Source	40	50	51	52	53	54	55	56	57	58	59	60
<b>Capital Items</b>															
1	Gross Asset														
2	Depreciation Reserve														
3	Accumulated Deferred Income Tax														
4	Net Asset														
5	Return on Equity														
6	Taxes														
7	Depreciation (Book)														
8	In Tax														
9	Revenue Requirement														
<b>Detailed Tax Calculation</b>															
10	Depreciation (Book)														
11	Depreciation (Tax)														
12	Difference														
13	Tax Rate														
14	Deferred Tax Amount														
15	Current Taxes														
16	Accumulated Depreciation (Tax)														
17	NPV Revenue Requirement														
18	NPV Tax Req Converted to an Annuity														
19	Annual Capital Cost Factor														
20	Note 1														
21	Note 2														
22	Ln 18 / C														

A Investment Type	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
Line	Year																									
1 Capital Items																										
2 Gross Assets																										
3 Depreciation Reserve																										
4 Accumulated Deferred Income Tax																										
5 Net Asset																										
6 Return on Equity																										
7 Expenses <sup>1</sup>																										
8 Interest																										
9 Revenue Requirement																										
10 Deferred Tax Calculation																										
11 Depreciation (Book)																										
12 Difference																										
13 Tax Rate																										
14 Deferred Tax Amount																										
15 Current Taxes																										
16 Accumulated Depreciation (Tax)																										
17 NPV Revenue Requirement																										
18 NPV Rev Req Converted to an Annuity																										
19 Annual Capital Cost Factor																										

Note 1: NPV is calculated as follows:

$$NPV = (v + u) / (1 + interest rate)^n \text{ from } i = 1 \text{ to } n \text{ where } n = \text{the number of cash flows}$$

Interest Rate = (% Debt \* Cost of Debt) + (1 - % Debt) \* Return on Equity))

Note 2: NPV Revenue Requirement Converted to an Annuity is calculated as follows:

The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest and Term.

The following formula calculates the periodic payment: Payment = (Principal \* (Interest / (1 - (Interest + 1)^(-n)))) where n = Book Life



		Line Year	Source	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
A	Investment Type		Poles	2411															
B	Account Number		\$1000																
C	Investment Amount		0.00%																
D	Cost of Debt		0.00%																
E	Return on Equity		0.00%																
F	% Debt on Equity																		
G	Book Life		#DIV/0!																
H	IRS Tax Rate		15.00																
I																			
1	Gross Asset																		
2	Depreciation Reserve																		
3	Accumulated Deferred Income Tax																		
4	Net Asset																		
5	Return on Equity																		
6	Taxes																		
7	Excess																		
8	Depreciation (Book)																		
9	Interest																		
10	Revenue Requirement																		
11	Deferred Tax Calculation																		
12	Depreciation (Book)																		
13	Depreciation (Tax)																		
14	Difference																		
15	Tax Rate																		
16	Deferred Tax Amount																		
17	Current Taxes																		
18	Accumulated Depreciation (Tax)																		
19	NPV Revenue Requirement																		
20	NPV Rev Rec Converted to an Annuity																		
21	Annual Capital Cost Factor																		
22	LN 18/C																		



A Investment Type	Annual
B Account Number	2,421
C Investment Amount	\$1,000
D Cost of Debt	0.00%
E Return on Equity	0.00%
F % Debt	0.00%
G Book Life	15 years
H Tax Life	15 years
I Tax Rate	0.00%

Line	Year	Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Capital Items																	
2	Gross Asset		1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	
3	Accumulated Deferred Income Tax		#DIV/0!															
4	Net Asset		#DIV/0!															
5	Return on Equity		#DIV/0!															
6	Taxes		#DIV/0!															
7	Expenditures		#DIV/0!															
8	Interest		#DIV/0!															
9	Revenue Requirement		#DIV/0!															
10	Deferred Tax-Calculation																	
11	Depreciation (Book)		#DIV/0!															
12	Depreciation (Tax)		#DIV/0!															
13	Difference		#DIV/0!															
14	Tax Rate		#DIV/0!															
15	Current Taxes		#DIV/0!															
16	Accumulated Depreciation (Tax)		#DIV/0!															
17	NPV Revenue Requirement	Note 1	50.00	145.00	230.50	307.50	376.50	439.10	498.10	557.10	616.20	675.20	734.30	793.30	852.40	911.40	970.50	1,000.00
18	NPV Rev Rec Converted to an Annuity	Note 2	#DIV/0!															
19	Annual Capital Cost Factor		#DIV/0!															

Note 1 NPIV is calculated as follows:

$$NPIV = (v_{sub} / (1 + interest \cdot tax)^n) from i = 1 to n where n = the number of cash flows$$

$$interest \cdot Tax = ((\% \text{ Debt} \cdot \text{Cost of Debt}) + (1 - \% \text{ Debt}) \cdot \text{Return on Equity}))$$

Note 2 NPIV Revenue Requirement converted to an Annuity is calculated as follows:

$$The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest and Term.$$

The following formula calculates the periodic payment. Payment = (Principal \* interest / (1 - (interest + 1)^-n)).

where n = Book Life





	Line Year	Source	49	50	51	52	53	54	55	56	57	58	59	60
A Investment Type		Actual												
B Account Number		2421												
C Investment Amount	\$ 0,000													
D Cost of Debt	0.00%													
E Return on Equity	0.00%													
F % Cost	0.00%													
G Book Value		#DIV/0!												
H Tax Due	15.00													
I Tax Rate	0.00%													
C Capital Items														
1 Gross Asset	1,000.00		1,000.00		1,000.00		1,000.00		1,000.00		1,000.00		1,000.00	
2 Depreciation Reserve	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
3 Accumulated Deferred Income Tax	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
4 Net Asset	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
5 Return on Equity	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
6 Taxes	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
7 Expenses	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
8 Interest	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
9 Revenue Requirement	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
D Deferred Tax Calculations														
10 Depreciation (Book)	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
11 Depreciation (Tax)	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
12 Difference	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
13 Tax Rate	0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%	
14 Deferred Tax Amount	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
15 Current Taxes	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
16 Accumulated Depreciation (Tax)	#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	
17 NPI Revenue Requirement	1,000.00		1,000.00		1,000.00		1,000.00		1,000.00		1,000.00		1,000.00	
18 NPI Rev Rec Converted to an Annuity	Note 1													
19 Annual Capital Cost Factor	Note 2													
	Ln 18/C													

Line	Year	Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>Capital Items</b>																	
A	Investment Type	Underground															
B	Account Number	2422															
C	Investment Amount	\$1,000															
D	Cost of Debt	0.00%															
E	Return on Equity	0.00%															
F	% of Debt	0.00%															
G	Book Life	#DIV/0!															
H	Tax Life	15.00															
I	Tax Rate	0.00%															
<b>Revenues</b>																	
1	Gross Asset	C															
2	Depreciation Reserve	1,074.2 prior	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
3	Accumulated Deferred Income Tax	Ln1+3 prior	#DIV/0!														
4	Net Asset	Ln1+2+3	#DIV/0!														
5	Return on Equity	Ln4*(1-F)*E	#DIV/0!														
6	Taxes																
7	Depreciation (Book)	Ln1*(1/G)	#DIV/0!														
8	Interest	Ln1*D	#DIV/0!														
9	Revenue Requirement	Ln5 8	#DIV/0!														
<b>Deferred Tax Calculation</b>																	
10	Depreciation (Book)	Ln7 Tax Table	#DIV/0!														
11	Depreciation (Tax)	Ln10-11	#DIV/0!														
12	Difference	0.00%	#DIV/0!														
13	Tax Rate	Ln12+13	#DIV/0!														
14	Deferred Tax Amount																
15	Current Taxes	Ln13+14	#DIV/0!														
16	Accumulated Depreciation (Tax)	Ln11+16 prior	#DIV/0!														
17	NPV Revenue Requirement	50.00	145.00	230.50	307.50	376.80	439.10	498.10	557.10	618.20	675.20	734.30	793.30	852.40	911.40	970.50	1,030.20
18	NPV Tax Req Converted to an Annuity	Note 1	#DIV/0!														
19	Annual Capital Cost Factor	Note 2	#DIV/0!														

Note 1 NPV is calculated as follows

$$NPV = (v_{sub} / (1 + interest \ rate))^{1/n}$$

Interest Rate = ((% Debt \* Cost of Debt) + (1 - % Debt) \* Return on Equity))

Note 2 NPV Revenue Requirement Converted to an Annuity is calculated as follows

The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest and Term

The following formula calculates the periodic payment. Payment = (Principal \* interest / (1 - (1 + interest)^-n))

where n = Book Life





A Investment Type	B Account Number	C Underlying	D Investment Amount	E Cost of Debt	F Return on Equity	G % Debt	H Book Life	I Tax Life	J Tax Rate					
Line	Year	Source	49	50	51	52	53	54	55	56	57	58	59	60
1	Grants-Accrual	C	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
2	Depreciation Reserve	Ln7*2 prior	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	Accumulated Deferred Income Tax	Ln14*3 prior	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	Net Asset	Ln1*2+3	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	Return on Equity	Ln4*(1-FYI)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	Taxes	Ln5*(U1-1)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	Depreciation (Book)	Ln1*(1-FD)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8	Interest	Ln5 8	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9	Revenue Requirement													
10	Deferred Tax Calculation	Ln7	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	Depreciation (Tax)	Tax Table	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Difference	Ln10-11	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13	Tax Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
14	Deferred Tax Amount	Ln2*13	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	Current Taxes	Ln5*14	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16	Accumulated Depreciation (Tax)	Ln11+15 prior	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17	NPI Revenue Requirement	Note 1	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
18	NPI Rev Rec Converted to an Annuity	Note 2												
19	Annual Capital Cost Factor	Ln18/F												

A	Investment Type	Balanced															
B	Account Number	2423															
C	Investment Amount	\$ 1 000															
D	Cost of Debt	0.00%															
E	Return on Equity	0.00%															
F	% Debt																
G	Book Life																
H	Tax Life																
I	Tax Rate																
	Line Year																
	Source																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Capital Items																
1	Gross Assets																
2	Depreciation Reserve																
3	Accumulated Deferred Income Tax																
4	Net Asset																
5	Return on Equity																
6	Taxes																
7	Depreciating Book																
8	Interest																
9	Revenue Requirements																
	Deferred Tax Calculations																
10	Depreciation (Book)																
11	Depreciation (Tax)																
12	Difference																
13	Tax Rate																
14	Deferred Tax Amount																
15	Current Taxes																
16	Accumulated Depreciation (Tax)																
17	NPV Revenue Requirement																
18	NPV Tax Rate Converted to an Annuity																
19	Annual Capital Cost Factor																

Note 1 NPV is calculated as follows:  

$$NPV = (v \text{ sub } i / (1 + \text{Interest rate})) \text{ from } i = 1 \text{ to } n \text{ where } n = \text{the number of cash flows}$$

Interest Rate = ((% Debt \* Cost of Debt) + (1 % Debt \* Return on Equity))

Note 2 NPV Revenue Requirement Converted to an Annuity is calculated as follows:  
The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest, and Term.

The following formula calculates the periodic payment: Payment = (Principal \* (Interest / (1 - (Interest \* 1^(Term)))) / where n = Book Life

A Investment Type	B Line Year	E Basis	F Line Year
C Account Number	D Investment Amount	E Cost of Debt	F Return on Equity
G % Debt	H Book Life	I Tax Life	J Tax Rate
\$ 243	\$ 0.00	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%
0.05%	0.05%	0.05%	0.05%
15.00	#DIV/0!	#DIV/0!	#DIV/0!
0.00%	0.00%	0.00%	0.00%
	Source	17	18
		19	20
		21	22
		23	24
		25	26
		27	28
		29	30
		31	32
	Capital Items	C	
1 Gross Asset	1,000.00	1,000.00	
2 Depreciation Reserve	#DIV/0!	#DIV/0!	
3 Accumulated Deferred Income Tax	#DIV/0!	#DIV/0!	
4 Net Asset	#DIV/0!	#DIV/0!	
5 Return on Equity	#DIV/0!	#DIV/0!	
6 Taxes	#DIV/0!	#DIV/0!	
7 Depreciation (Book)	#DIV/0!	#DIV/0!	
8 Interest	#DIV/0!	#DIV/0!	
9 Revenue Requirement	#DIV/0!	#DIV/0!	
	Deferred Tax Calculation		
10 Depreciation (Book)	#DIV/0!	#DIV/0!	
11 Depreciation (Tax)	#DIV/0!	#DIV/0!	
12 Difference	#DIV/0!	#DIV/0!	
13 Tax Rate	0.00%	0.00%	
14 Deferred Tax Amount	#DIV/0!	#DIV/0!	
15 Current Taxes	#DIV/0!	#DIV/0!	
16 Accumulated Depreciation (Tax)	#DIV/0!	#DIV/0!	
17 NPV/Revenue Requirement	1,000.00	1,000.00	
18 NPV/Rev Recd Converted to an Annuity	#DIV/0!	#DIV/0!	
19 Annual Capital Cost Factor	Ln#18/C	Ln#18/C	













	Investment Type	InitialBuild
A	Account Number	2428
B	Investment Amount	\$ 0.00
C	Cost of Debt	0.00%
D	Return on Equity	0.00%
E	% Debt	0.00%
F	Book Life	#DIV/0!
G	Term Life	15.00
H	Interest Rate	0.00%

	Line Year	Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Cumulative																	
1	Gross Asset																	
2	Depreciation Reserve																	
3	Accumulated Deferred Income Tax																	
4	Net Asset																	
5	Return on Equity																	
6	Taxes																	
7	Expenditure																	
8	Depreciation (Book)																	
9	Interest																	
10	Revenue Requirement																	
11	Deferred Tax Calculation																	
12	Depreciation (Book)																	
13	Depreciation (Tax)																	
14	Difference																	
15	Tax Rate																	
16	Deferred Tax Amount																	
17	Current Taxes																	
18	Accumulated Depreciation (Tax)																	
19	NPV Revenue Requirement Converted to an Annuity																	
20	Annual Capital Cost (Book)																	
21	NPV Re-Rated Capital Cost (Book)																	
22	NPV Re-Rated Capital Cost (Term)																	
23	NPV Re-Rated Capital Cost (Term Life)																	
24	NPV Re-Rated Capital Cost (Term Life)																	
25	NPV Re-Rated Capital Cost (Term Life)																	
26	NPV Re-Rated Capital Cost (Term Life)																	
27	NPV Re-Rated Capital Cost (Term Life)																	
28	NPV Re-Rated Capital Cost (Term Life)																	
29	NPV Re-Rated Capital Cost (Term Life)																	
30	NPV Re-Rated Capital Cost (Term Life)																	
31	NPV Re-Rated Capital Cost (Term Life)																	
32	NPV Re-Rated Capital Cost (Term Life)																	
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99	NPV Re-Rated Capital Cost (Term Life)																	
100	NPV Re-Rated Capital Cost (Term Life)																	

Note 1 NPV is calculated as follows:

$NPV = (P_{1:n} / (1 + Interest\ Rate)^n) \times (1 - Interest\ Rate) + (1 - %\ Debt) * (1 - %\ Debt) * Return\ on\ Equity)$

Note 2 NPV Re-Rated Capital Cost converted to an Annuity is calculated as follows:

The interest rate calculation is the same as in Note 1. The component parts are Principal, Interest, and Term.

The following formula calculates the periodic payment:  $Payment = (Principal * Interest / (1 + Interest + 1^n))$

where n = Book Life







A Investment Type	B Serial Wire	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	X
Line	Year	Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1 Capital Items																						
2 Depreciation Reserve																						
3 Accumulated Deferred Income Tax																						
4 Net Asset																						
5 Return on Equity																						
6 Taxes																						
7 Depreciation (Book)																						
8 Interest																						
9 Revenue Requirement																						
10 Depreciation (Calculation)																						
11 Depreciation (Tax)																						
12 Difference																						
13 Tax Rate																						
14 Deferred Tax Amount																						
15 Current Taxes																						
16 Accumulated Depreciation (Tax)																						
17 NPV Revenue Requirement																						
18 NPV Rev Red Converted to an Annuity																						
19 Annual Capital Con Factor																						

Note 1 NPV is calculated as follows

$$\text{NPV} = (v_{\text{sub}} / (1 - \text{Interest rate}))^{1/n}$$
 from  $i = 1$  to  $n$  where  $n$  is the number of cash flows

Interest Rate = ((% Debt \* Cost of Debt) + (1 - % Debt) \* Return on Equity))

Note 2 NPV Revenue Requirement Converted to an Annuity is calculated as follows

The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest, and Term. The following formula calculates the periodic payment. Payment = (Principal \* Interest) / (1 - (Interest + 1)^-n)) where n = Book Life







		Line Year	Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A Investment Type		Credit/Debt																	
B Account Number		2441																	
C Investment Amount	\$1,000																		
D Cost of Debt	0.00%																		
E Return on Equity	0.00%																		
F % Debt	0.00%																		
G Book Life																			
H Tax Life																			
I Tax Rate	0.00%																		
	#DIV/0!																		
	15.00																		
	0.00%																		

1 Capital/Liquid Assets		C																
2 Depreciation Reserve	1,000.00	-Ln/2 prior	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
3 Accumulated Deferred Income Tax	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4 Net Asset	Ln1+2+3	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5 Return on Equity	Ln4*(I/(1-E))	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6 Taxes		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7 Depreciation (Book)	Ln1*(1-G)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8 Interest	(Ln4-F)*D	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9 Revenue Requirement		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10 Deferred Tax Calculation		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11 Depreciation (Tax)	Ln7	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12 Difference	Ln10-11	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13 Tax Rate		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
14 Deferred Tax Amount		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15 Current Taxes		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16 Accumulated Depreciation (Tax)	Ln8-14	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17 NPV/Revenue Requirement		50.00	145.00	230.50	307.50	378.80	439.10	498.10	557.10	618.20	675.20	734.30	793.30	852.40	911.40	970.50	1,000.00	
18 NPV/Rev Rec Converted to an Annuity	Note 1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
19 Annual Capital Cost Factor	Note 2	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
	Ln 18/C	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	

Note 1 NPV is calculated as follows:

NPV = (y sub 1 / (1 - interest rate)^1) + ... + (y sub n / (1 - interest rate)^n)

(Interest Rate = (% Debt \* Cost of Debt) + (% Debt \* Return on Equity))

Note 2 NPV/Revenue Requirement Converted to an Annuity is calculated as follows:

The interest rate calculation is the same as that in Note 1. The component parts are Principal, Interest, and Term.

The following formula calculates the periodic payment. Payment = Principal \* (Interest / (1 - (Interest + 1)^-n))

Where n = Book Life







Year	3 Year Table Depr Rate x \$1,000	5 Year Table Depr Rate x \$1,000	7 Year Table Depr Rate x \$1,000	10 Year Table Depr Rate x \$1,000	15 Year Table Depr Rate x \$1,000	20 Year Table Depr Rate x \$1,000	31 5 Year Table Depr Rate x \$1,000							
1	33.33%	\$333.30	20.00%	\$200.00	14.29%	\$142.90	10.00%	\$100.00	5.00%	\$50.00	3.75%	\$37.50	1.72%	\$17.20
2	44.45%	\$444.50	32.00%	\$320.00	24.49%	\$244.90	18.00%	\$180.00	9.50%	\$95.00	7.22%	\$72.19	3.18%	\$31.75
3	14.81%	\$148.10	19.20%	\$192.00	17.49%	\$174.90	14.40%	\$144.00	8.55%	\$85.50	6.68%	\$66.77	3.18%	\$31.75
4	7.41%	\$74.10	11.52%	\$115.20	12.49%	\$124.90	11.52%	\$115.20	7.70%	\$77.00	6.18%	\$61.77	3.18%	\$31.75
5			11.52%	\$115.20	8.93%	\$89.30	9.22%	\$92.20	6.93%	\$69.30	5.71%	\$57.13	3.18%	\$31.75
6			5.76%	\$57.60	8.92%	\$89.20	7.37%	\$73.70	6.23%	\$62.30	5.29%	\$52.85	3.18%	\$31.75
7			8.93%	\$89.30	6.55%	\$65.50	5.90%	\$59.00	4.89%	\$48.88	3.18%	\$31.75		
8			4.46%	\$44.60	6.55%	\$65.50	5.90%	\$59.00	4.52%	\$45.22	3.17%	\$31.74		
9					6.56%	\$65.60	5.91%	\$59.10	4.46%	\$44.62	3.18%	\$31.75		
10					6.55%	\$65.50	5.90%	\$59.00	4.46%	\$44.61	3.17%	\$31.74		
11					3.28%	\$32.80	5.91%	\$59.10	4.46%	\$44.62	3.18%	\$31.75		
12							5.90%	\$59.00	4.46%	\$44.61	3.17%	\$31.74		
13							5.91%	\$59.10	4.46%	\$44.62	3.18%	\$31.75		
14							5.90%	\$59.00	4.46%	\$44.61	3.17%	\$31.74		
15							5.91%	\$59.10	4.46%	\$44.62	3.18%	\$31.75		
16							2.95%	\$29.50	4.46%	\$44.62	3.18%	\$31.75		
17														
18														
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22														
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24														
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27														
28														
29														
30														
31														
32														
33														
Total	100.00%	\$1,000.00	100.00%	\$1,000.00	100.00%	\$1,000.00	100.00%	\$1,000.00	100.00%	\$1,000.00	100.00%	\$1,000.00	100.00%	\$1,000.00

TELRIC Model  
Tennessee CMRS Interconnection

Line No	Account Name	Abbreviated Account Name	Estimated Future Net Salvage A	Average Service Life B	Depreciation Rate C=(1-A)/B	Book Life D=1/C	Tax Life E
1	2112 Motor Vehicles	Vehicles	#DIV/0!	#DIV/0!	#DIV/0!	5.00	
2	2115 Garage Work Equipment	GWE	#DIV/0!	#DIV/0!	#DIV/0!	7.00	
3	2116 Other Work Equipment	OWE	#DIV/0!	#DIV/0!	#DIV/0!	7.00	
4	2121 Buildings	Building	#DIV/0!	#DIV/0!	#DIV/0!	31.50	
5	2122 Furniture	Furniture	#DIV/0!	#DIV/0!	#DIV/0!	7.00	
6	2123 1 Office Support Equipment	Office Equip	#DIV/0!	#DIV/0!	#DIV/0!	7.00	
7	2123.2 Company Communications Equipment	Com Equip	#DIV/0!	#DIV/0!	#DIV/0!	7.00	
8	2124 General Purpose Computers	GPC	#DIV/0!	#DIV/0!	#DIV/0!	5.00	
9	2212 Digital Electronic Switching	Switch	#DIV/0!	#DIV/0!	#DIV/0!	5.00	
10	2231 Radio Systems	Radio	#DIV/0!	#DIV/0!	#DIV/0!	5.00	
11	2232 Circuit Equipment	Circuit	#DIV/0!	#DIV/0!	#DIV/0!	5.00	
12	2411 Poles	Poles	#DIV/0!	#DIV/0!	#DIV/0!	15.00	
13	2421 Aerial Cable	Aerial	#DIV/0!	#DIV/0!	#DIV/0!	15.00	
14	2422 Underground Cable	Underground	#DIV/0!	#DIV/0!	#DIV/0!	15.00	
15	2423 Buried Cable	Buried	#DIV/0!	#DIV/0!	#DIV/0!	15.00	
16	2424 Submarine Cable	Submarine	#DIV/0!	#DIV/0!	#DIV/0!	15.00	
17	2426 Intrabuilding Network Cable	Intrabuild	#DIV/0!	#DIV/0!	#DIV/0!	15.00	
18	2431 Aerial Wire	Aerial Wire	#DIV/0!	#DIV/0!	#DIV/0!	15.00	
19	2441 Conduit Systems	Conduit	#DIV/0!	#DIV/0!	#DIV/0!	15.00	

Line	Description	Source	Total
1	Investment Amount		1,000.00
2	Cost of Debt	Input	0.00%
3	Return on Equity	Input	0.00%
4	Debt Percentage	Input	0.00%
5	Tax Rate		0.00%
6	Gross Asset	L1	1,000.00
7	Return on Equity	L3	0.00%
8	Return on Investment	L6*L7	0.00
9	Interest	L6*L2*L4	0.00
10	Net Return	L8-L9	0.00
11	Tax Rate	L5	0.00%
12	Income Taxes	L10*L11	0.00
13	Revenue Requirement	L10+L12	0.00
14	Investment Amount	L1	1,000.00
15	Annual Capital Cost Factor	L13/L14	0.000000

Line	Description	Source	Rate
1	State Tax Rate	Input	0.00%
2	Federal Tax Rate	Input	0.00%
3	1-State Tax Rate	1-O-L2	100.00%
4	Federal Tax Rate	L2	0.00%
5	Adjusted Federal Tax Rate	L3*L4	0.00%
6	State Tax Rate	L1	0.00%
7	Effective Tax Rate	L5+L6	0.00%

Number	Account Name	Expense Balance	Related Investment Accounts	Related Investment Balance	Expense & Tax Factors
6112	Motor Vehicle Expense	2112	#DIV/0!	2112	#DIV/0!
6113	Aircraft Expense	2113	#DIV/0!	2113	#DIV/0!
6115	Garage Work Equipment Expense	2115	#DIV/0!	2115	#DIV/0!
6116	Other Work Equipment Expense	2116	#DIV/0!	2116	#DIV/0!
	Total 6110, Network Support Expenses				
6121	Land & Building Expense	2122/2121	#DIV/0!	2122	#DIV/0!
6122	Furniture & Artworks Expense	2122	#DIV/0!	2122	#DIV/0!
6123	Office Equipment Expense	2123	#DIV/0!	2123	#DIV/0!
6124	General Purpose Computers Expense	2124	#DIV/0!	2124	#DIV/0!
	Total 6120, General Support Expenses				
6211	Non-digital Switching Expense	2212	#DIV/0!	2212	#DIV/0!
6212	Digital Electronic Expense	2212	#DIV/0!	2212	#DIV/0!
	Total 6210, Central Office Switching Expense				
6231	Radio Systems Expense	2231	#DIV/0!	2231	#DIV/0!
6232	Circuit Equipment Expense	2232	#DIV/0!	2232	#DIV/0!
	Total Account 6230, Central Office Transmission Expense				
6411	Poles Expense	2411	#DIV/0!	2411	#DIV/0!
6421	Aerial Cable Expense	2421	#DIV/0!	2421	#DIV/0!
6422	Underground Cable Expense	2422	#DIV/0!	2422	#DIV/0!
6423	Buried Cable Expense	2423	#DIV/0!	2423	#DIV/0!
6424	Submarine Cable Expense	2424	#DIV/0!	2424	#DIV/0!
6425	Deep Sea Cable Expense	2425	#DIV/0!	2425	#DIV/0!
6426	Intrabuilding Network Cable Expense	2426	#DIV/0!	2426	#DIV/0!
6431	Aerial Wire Expense	2431	#DIV/0!	2431	#DIV/0!
6441	Conduit Systems Expense	2441	#DIV/0!	2441	#DIV/0!
	Total Account 6410, Cable & Wire Facilities Expense				
	Total Plant Specific				

TELRIC Model  
Tennessee CMRS Interconnection

Number	Account Name	Expense Balance	Related Investment Accounts	Related Investment Balance	Expense & Tax Factors
6511	Property Held for Future Telecommunications Use	2210/2230/2410 exc2411/2441			#DIV/0!
6512	Provisioning Expense	2210/2230/2410 exc2411/2441			#DIV/0!
	<i>Total Account 6510, Other Property, Plant &amp; Equipment Expense</i>				
6531	Power Expense	2210/2230			#DIV/0!
6532	Network Administration Expense	2210/2230/2410 exc2411/2441			#DIV/0!
6533	Testing Expense	2210/2230/2410 exc2411/2441			#DIV/0!
6534	Plant Operations Administration Expense	2210/2230/2410 exc2411/2441			#DIV/0!
6535	Engineering Expense	2210/2230/2410 exc2411/2441			#DIV/0!
	<i>Total Account 6530, Network Operations Expense</i>				

Line Switch Locations

Line	COE	Switch Locations	1	2	3	Total
4	Tandem Switching					
5	Local Switching					
6	Trunk Ports					
7	EF&I					
8	Power					
9	Land					
10	Building					

Line	COE	Switch Locations	1	2	3	Total
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Line	CWF	Weighted Average Install Cost/Unit	Units	Weighted Average Material Cost/Unit	Fill Factor	Structure Sharing Factor	Common Transport Factor
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11	Poles
12	Aerial
13	Underground
14	Buried
15	Conduit

Line	Circuit Equipment	Material Cost	Install Cost	Fill Factor	Interoffice Transport Factor
16	OC-48 ADM				
17	OC-12 ADM				
18	OC-3/DS1 Terminal Mux				
19	Pigtails				
20	Fiber Patch Panel				
21	Channel Bank				
22	Digital Cross Connect				
23	OC-48 Regenerator				

Line	General Support Facilities	Cost
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24 Land  
 25 Motor Vehicles  
 26 Garage Work Equipment  
 27 Other Work Equipment  
 28 Buildings  
 29 Furniture  
 30 Company Office Equip  
 31 Company Comm Equip  
 32 General Purpose Computers

Line	Other	Value
33	Cost of Debt	
34	Return on Equity	
35	Debt Percentage	
36	State Income Tax Rate	
37	Federal Income Tax Rate	
38	Property Tax Rate	
39	Switch Vendor Discount	
40	Common Cost Factor	
41	Uncollectibles	
42	Minutes	